

# amateur radio



VOL. 43, No. 3

MARCH 1975

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### COVER PHOTO

"Foxhunting" is a popular 2 metre activity in Australia. It is surprising what excellent results are obtained with a simple three element beam mounted on the side of the car.

Photo: Roly Roper VK3YFF

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

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# amateur radio

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA, FOUNDED 1910

## QSP

### IARU NEWS

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Arrangements are going ahead well for the IARU R3 Association Conference in Hong Kong from 4th to 13th March in the Lee Gardens Hotel (see Jan. AR, p.6).

The Agenda for the Conference was circulated before Christmas and predictably includes the usual round of formalities including the appointment of Conference Chairman, Secretary and Asst. Sec., Credentials and Editorial Committees, Agenda and Rules of Procedure. Reports from officers, Society delegates and other interested amateurs are then taken, followed by discussions on these.

Then comes matters arising from the 1971 R3 Tokyo Conference, a summary and review of the 1971 ITU Space Conference by Tom Clarkson ZL2AZ and an address about the 1979 WARC by IARU President Mr. Noel Eaton VE3CJ.

The formulation and adoption of policies as the result of further discussions and appointments of Working Groups then follows in association with the best methods of implementing such policies.

Two additional matters arising from the 1971 Tokyo Conference are then on the agenda namely "Conformity with the ITU Radio Regulations" and "Development of amateur radio activity in Region III."

Discussion on the Intruder Watch Scheme is followed by general proposals submitted by member Societies, the budget, election of Directors for the next triennium, date and venue of the 4th IARU R3 Conference and formal closure.

The triennium budget as might be expected shows that inflation may well catch up with the R3 Association for the 4th Conference, not because of increases in the exceedingly modest secretariat expenses, but from anticipated travel and accommodation charges which would then have to be met for the Directors and officers of the Association despite the assumption that the Association should expand slightly. The budget prudently includes a little for travel expenses within the Region.

#### IN DAYS OF OLD

"A splendid attendance of members and visitors totaling about 100 was the result of a broadcast invitation. All were very enthusiastic and the meeting was an unparalleled success. Several proposal forms were filled in and a great many more were taken away for completion. A very interesting lecture on Induction Coil Construction was delivered by Mr. J. Strickland and was greatly appreciated by those present. A hearty vote of thanks was accorded the lecturer. Several specimens of home made instruments were on view". Excerpts from the minutes of a General Meeting of the Amateur Wireless Society of Victoria held in the Oxford Chambers, Bourke Street, on 5th December, 1912.

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The WIA have three main papers for this Conference to date. An Intruder Watch document which could prove difficult "to sell" in the light of the WIA apparently being the sole interested party in intruders throughout the entire region. A well documented up-to-the-minute paper about the need for international uniformity of frequency allocations in the VHF/UHF region by the Chairman and members of the Institute's VHF/UHF Advisory Committee is the second of the three papers and ideally is aimed at Administrations rather than other amateurs who need little convincing about this (e.g. Malaysia and absence of the 2m amateur band). The third paper is a report by myself as the WIA delegate.

Tom Clarkson's reports about the 1971 WARC are of course exceedingly bulky and much of the material has already been adequately reported over the years since then. Tom Clarkson also produced proposals for consideration by the R3 Conference for strengthening the Amateur Service influence in the right directions for WARC 1979. Tom suggests, *inter alia*, that during 1976 and 1977 a personal call should be made by the IARU President (or Deputy) upon the heads of all the Radio Administrations and this should be sought and arranged by the national Society.

A report by Michael Owen VK3KI, one of the Directors, supports Tom Clarkson's proposals with a number of detailed suggestions to aid in implementation.

I am looking forward to this Conference as your appointed representative but I feel a little disappointed that although WIA Divisions, were specifically asked to send material forward to help me at this Conference but the response was noticeable poor.

Let us wish the R3 Association well for their Conference which may well be crucial for this part of the world in the next few years.

D. A. WARDLAW VK3ADW  
Federal President

#### EMERGENCY COMMUNICATIONS IN PERU

"In the Regulations dealing with radio amateur activity it also lays down that all radio amateur stations must be permanently operational in the 40 metre band so that they can be called upon at any time to take part in the emergency service". Radio Amateurs column in the Telecommunications Journal, Oct., 1974.

#### 70 cm DRAFT BAND PLAN

Are you active on the 70 cm band? If so, have you sent in your comments on the proposed 70 cm band plan as printed on page 9 of AR Oct. '74? If not, do it now or be for ever silent, as the saying goes.

# QSP

## WENTWORTHSHIRE BUSHFIRES FROM DECEMBER 27th

A note from Geoff Syme, a WIA member in Poonaie, gives some details of communications operations carried out by a number of various operators, including the Shire President, Jeff Whyte VK2AHM, using equipment loaned by the NSW State Emergency Services. He commented that the size of the shire makes VHF impracticable without the use of repeaters and that almost all fires in the area started by thunderstorms last on a squall's day makes HF contacts almost impossible during the initial period of fire fighting. Also he said that most of the fire fighting is done during the night because the fires tend to be quite uncontrollable during the day. He concludes that VHF is essential in areas around a fire especially as HF gets very difficult at night unless portable aerials can be strung up high enough and greater power is available.

### AWARDS

The Publications Committee announce the following awards for the year 1974 —

**Higginbotham Award** (worth \$50) to Eric Jamieson VK5SLP for his splendid work in continuing his interesting VHF/UHF column.

**A.S.J.A.** (Plaque and \$10) to Don Marshall VK2ZAF for his article "The Brisbane Valley Flood Disaster" published in April.

**Technical Award.** Because so many articles vied equally with each other for first choice the Committee felt unable to select any particular one as more outstanding than the others for the purposes of this Award (worth \$25).

### MORE STATISTICS

Radio Communication for Nov. '74 contains a chart which shows that the income of the RSGB for the year ended 30th June 1974 was derived from subscriptions 53 per cent, book sales 34 per cent, advertising 11 per cent and sundries 2 per cent; whilst expenditure for the same period went out at 43 per cent production cost of Radio Communication, 25 per cent cost of books, 21 per cent salaries and wages and staff costs, 8 per cent all other items and 3 per cent sundries. The comments in Council's Report about "Radio Communication" is that this is RSGB's largest single outgoing (and so it should be) and would cost

more if it were not for the considerable savings achieved by forward purchasing of paper, combined with judicious juggling of paper weights and pages per issue to make the most economical use of postal rates. It seems that AR is not therefore unique in the way we also must juggle!

### OVERSEAS LICENCE FEES

Taking the old \$6 as a yardstick, what major countries charged more for the annual amateur licence renewal? Nearly all the communist bloc countries made no charge, but of the others with amateur populations exceeding Australia's, the fee was greater in Canada, West Germany and France. The most expensive licences were apparently Belgium, Ivory Coast and Austria which were well in excess of our present \$12. Spain, 15 cents per watt, was an interesting variation since there was no apparent upper power limit. Other countries which had licence fees in excess of our new rate included Switzerland and Lebanon.

### 2m BAND IN U.K.

"I am afraid it is not yet possible to allow amateurs full access to the 144-145 MHz segment, but the aeronautical assignments have been reduced to the three frequencies 144.0 MHz, 144.54 MHz and 144.9 MHz. We cannot say when these remaining channels will be given up and amateurs must continue to avoid them". Extract from a letter from UK Radio Regulatory Division quoted in Mobile News, Oct. '74.

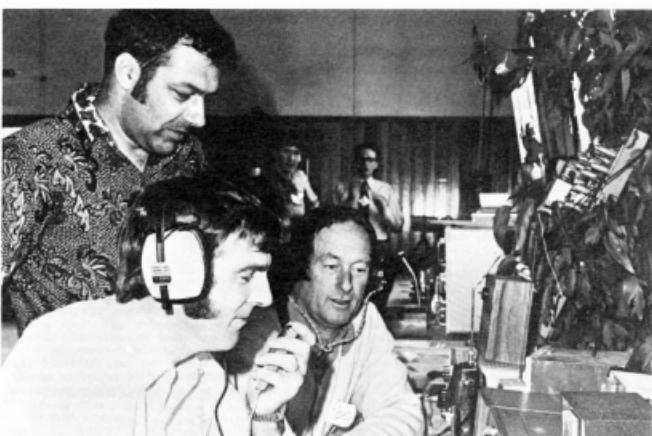
### CW NETWORK PROGRESSES

Founded about two years ago by Frank (VK4UJ), the CW Net is now a regular each Sunday morning on 7 MHz. At the time of writing, the net has functioned 97 times, and has drawn into its ranks a large number of expert CW operators. These men are firm believers in the permanence of telegraphy in a world where technological complexity is often developed for its own sake, or for commercial reasons.

Till recently the Net Controllers have come from either VK2 or VK4, but on Sunday January 5th, a Victorian, VK3XU, conducted the net for the first time and in a most effective manner. Drew handled the necessary QSOs for eighteen amateurs during a two-hour session, and repeated the performance on the following Sunday. And when one considers that each station would average about three contacts per session, this represents a considerable amount of work.

The net is there to be used by anyone reasonably proficient in CW operation. It will be found on 7025 kHz at 1000 hrs EAST on Sundays.

VK2AV for CWN



Operators (l. to r.) at the VK7 Divisional Hamfest were Bob VK7ZJS, Tony 7AX and Ken 7KH. This was the first hamfest organised by the N-W Branch and was held on 16/17 Nov. 1974 in the Turners Beach Hall, 8 miles west of Devonport. A number of social activities (including a fashion parade of night attire) were greatly enjoyed by the 80 or so adults attending. Photo courtesy The Advocate of Burnie.

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## Trade News

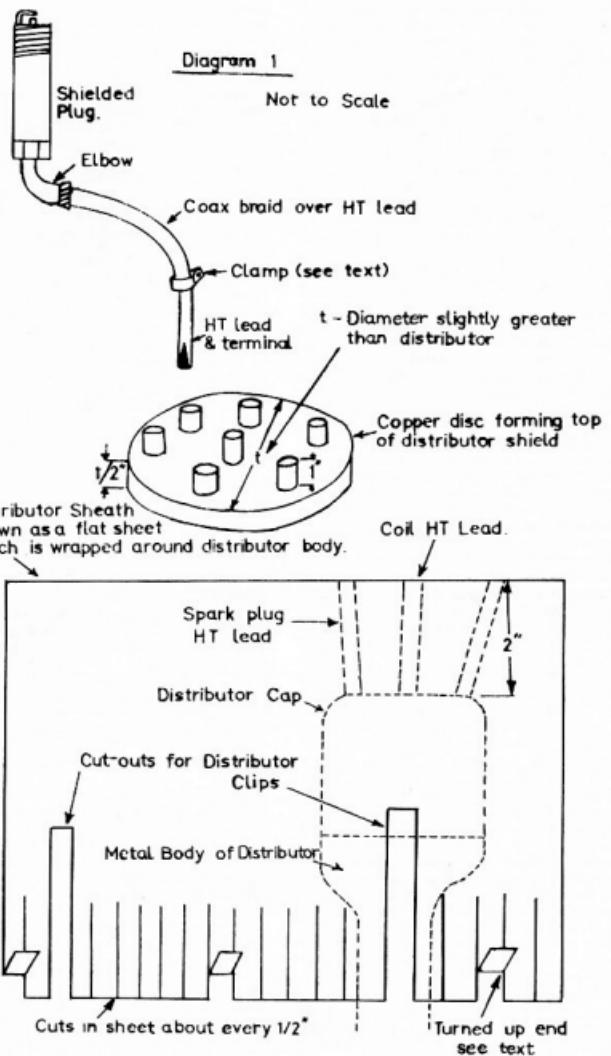


Peter Williams, VK3IZ, has recently been appointed general manager of newly-formed VICOM International Pty. Limited. Peter (known around the traps as "IZ") has been involved in WIA Federal, State and International affairs and until recently managed the Australian Electronic subsidiary of the Schaeffer Pen Group.

# Vehicle Ignition

## Noise Suppression

Rodney Champness, VK3UG  
44 Rathmullan Road, Boronia, 3155



The noise created by the ignition and other electrical circuitry of the common automobile is well known, and well cursed, by the amateur who has tried mobile operation. Some, of course, have been frightened off by the apparent problems involved in suppressing a vehicle. I intend to show a few methods of suppression from the easy to the much more laborious methods.

There are three easy methods. Firstly, if you are wealthy enough, you can buy a diesel powered car. A diesel produces no interference. The second method is to switch off the motor of your car whilst you are mobile. This is hardly practical and additionally is dangerous with the latest cars which have steering locks. The third method which may or may not be feasible is to wait for the introduction of the steam driven car. For the average person none of these easy methods is practical, so I will concentrate on the laborious but effective methods I have tried myself.

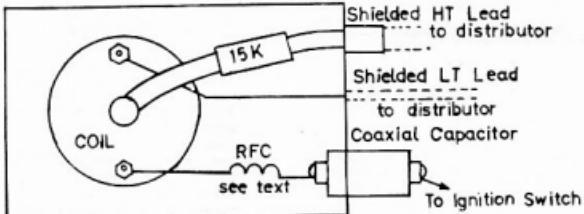
One of the first things that I found out when doing extensive experimentation on the suppression of spark ignition engines was that it would be a long job if the right techniques were not used. The final conclusion that I came to was that **THE WHOLE OF THE INTERFERENCE CAUSING SOURCE MUST EITHER BE SHIELDED COMPLETELY OR HAVE SUPPRESSION FILTERS FITTED WHERE SHIELDING IS NOT PRACTICAL.**

The ignition system of a car must have the whole of the HT spark system shielded, and this includes spark plugs, HT spark plug leads, distributor, connecting wiring to the coil, and the shielding of the coil top. The low tension lead from the coil is filtered because it would convey interference to all sections of the car as it is integrated with the rest of the wiring. It is also much easier to filter this lead. There is no practical method that I know of, of filtering completely the HT spark system. The carbon trace leads fitted to most new cars when new, do reduce interference quite considerably. Regrettably, many car owners and ignorant garage mechanics treat suppression leads as if they are the prime cause of engine trouble. They do give suppression figures of up to about 25 db over an un suppressed vehicle ignition system.

Having made my point in regard to the general philosophy of suppression, I will describe two methods of suppression. The

Diagram 2. View of coil from top of shielding box.

Not to Scale



first has been reasonably successful on the HF bands but not particularly so on VHF. The second method was a lot of work but is very good at MF, HF, and VHF, and should be reasonable at UHF. I don't claim that what I have done is necessarily original, but this style of thing has not been published in AR for many years, if ever.

#### METHOD ONE

At one time I was involved in the Emergency Fire Services of South Australia and the Country Fire Authority of Victoria. I was concerned with communications, particularly the communications to and from my mobile. I used a No. 122 transceiver and these are not blessed with a noise limiter as such. I didn't bother modifying the set so I had to do something about the noise from the ignition system of the FE Holden.

I had quite a bit of old half inch coaxial cable so this formed most of the raw material source for the suppression. The cable was stripped down to its components. The only section used was the coaxial braid. It was cut into lengths that suited each individual plug wire and a length to suit the HT line between distributor and coil. Each of these tubes of coaxial braid was slid over the appropriate distributor-plug lead. The ends of the braid were trimmed away from the plug at one end and the top of the distributor lead rubber gaskets, so that no arcing from the HT system to earth occurred. At each plug end a braid lead was soldered on and extended to the rocker cover where it was earthed. At the distributor the seven braids were bonded together. At the coil end of the distributor-coil lead the braid was bonded to the coil frame. FE Holdens do not have resistive HT cable so I fitted one of the 15,000 ohm resistive suppressors in the coil-distributor lead. This concludes all the information on the shielding of the HT system.

The coil LT lead had a 0.5  $\mu$ F 40 ampere coaxial capacitor fitted in the ignition line at the coil. These are much better than the normal suppressor used for car radio suppression work, even though three times the price. The generating system of the vehicle also required attention. The output and field leads were shielded, like the HT line, from the generator to the regulator. The output lead to the battery was

filtered with a coaxial capacitor, 0.5  $\mu$ F 40 ampere. The field terminal of the regulator was bypassed to earth with a series combination of a 5 ohm resistor and a 0.001  $\mu$ F mica capacitor. The coaxial capacitors must have their frame lugs bolted directly to the frame of the vehicle. The idiot light line was suppressed also, this time with a series RF choke situated at the regulator. The RF choke used was a LT choke from an old Astor vibrator car radio.

I could now work mobile to base distances of 25 miles whilst mobile which I certainly could not do before. If the set had had a noise limiter no doubt this range would have been even greater. The output power of the base was only of the order of 5 to 8 watts so I believe this was a credible performance. I found it most desirable to have the aerial on the rear of the vehicle to get as far away from the engine as possible, and so escape whatever interference still remained. I bonded the engine to the firewall with a heavy earth strap such as used on batteries and did the same to the bonnet. How desirable these were I am not sure. I do know that the noise at VHF emanating from this vehicle had to be heard to be believed — it could be heard a block or so away — and other vehicles were not

audible.

With later types of vehicles which have a rubber sheath over the spark plugs it is likely that the braid shield can be extended down onto the top of the plug which is partially recessed into the engine. This may improve VHF suppression. If you do this style of suppression you will probably find that the ignition timing has changed and may have to be advanced or retarded: I cannot remember which.

#### METHOD TWO

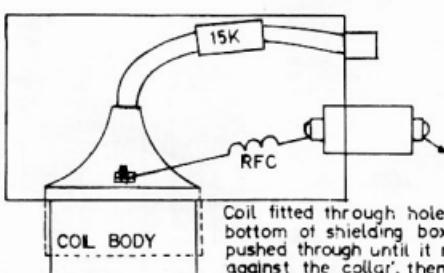
If you really want to have your vehicle suppressed so that a sensitive AM receiver at a few feet hears no interference — then this is the method for you. A vehicle suppressed using this method should not have any trouble passing the Society of Automotive Engineers interference specification SAE-J551. The vehicle suppressed in this case was a 1970 Ford Falcon.

There was a lot of blood, sweat and tears shed during this project before success was ours. This was not originally my project — my boss decided that he wanted his vehicle suppressed so that any receiver, AM or FM, could be operated in the vehicle on any frequency from the broadcast band to a couple of hundred megahertz. This was to be on a set with no noise limiter. Some task!

The ignition system was to be suppressed along the initial lines of method one only in a more thorough manner. The carbon trace HT spark plug lines were removed — not because we didn't like them, but because they would not suit the end terminations we would use, and they were too short. The distributor was to be completely shielded, and some interesting metal work evolved during the exercise. A metal disc slightly larger than the diameter of the distributor formed the basis of the distributor shield. This had a half inch lip bronzed to it, and through the top of the disc 6 equally spaced holes were drilled around the disc. The holes were large enough to take normal wire cored ignition HT wire. Six tubes each one inch long able to take these cables were bronzed around the circumference of the holes.

Diagram 3 Side view of coil shielding box

Not to Scale



An additional hole for the coil-distributor HT lead was bronzed to the centre of the disc. You may have realised this was a six cylinder engine.

Around the lip of the disc was wrapped a piece of 26 gauge galvanised sheet steel and this extended down past the distributor assembly. It was held in place onto the lip of the disc by a large hose clamp. Underneath the distributor another clamp was fitted and this was intended to draw the metal of the sleeve close into the distributor housing. To facilitate this drawing in of the metal, slits were cut vertically in the metal so that adjoining pieces of metal would fit under one another. It was found necessary to turn up a few of the ends of the metal strips so that they would prevent the clamp from slipping off the metal sheath. This must be fairly tight otherwise RFI leaks out from the small gaps underneath the distributor. There were two slots cut in the metal sheet to allow access to the distributor cap clips. All of this can be seen in diagram 1.

The HT leads extend through the disc mounted above the distributor. The disc is mounted about 2 inches above the top of the distributor cap. The HT lines are covered with heavy duty coaxial cable braid as were the leads in method one. We had no shielded spark plugs so the braid was extended as far down the spark plugs as could be achieved. The spark plug leads all had heavy rubber sleeves over them on the ends where they attached to the spark plugs. The braids were all bonded to the rocker cover near each spark plug. The coaxial shield braids were clamped onto the tubes protruding from the top of the disc on top of the distributor. Small screw type clamps available from Ford dealers or the smallest size hose clamps were used to do this job.

The HT lead from distributor to coil was also shielded, and clamped in the same way. A small metal case was made to go over the top of the coil. Access to the coil was gained by removing a small panel from this case. The HT lead outlet on the case was the same as the tubes on the top of the disc over the distributor and the braid was clamped in the same way. A 15,000 ohm resistive suppressor was placed in the HT lead. The coil to distributor LT lead was also shielded using a thinner coax braid. The braid was earthed at the coil and the distributor.

The ignition switch volt 12 active lead to the coil was filtered with a variety of L and C. A small balun core as used in many TV sets was used to wind a small VHF choke. Two or three turns of single core hook up wire was used through the two holes in the core. One end went to the coil LT line the other went to a 0.5 uF 100 ampere coaxial capacitor. The capacitor output end should be the only terminal of the capacitor visible outside the case. The filtered end of the RF choke should be very short as the capacitor may not be completely effective at VHF. Robert Bosch (Aust.), have some quite elaborate filters for this job — complete pi networks

in the one metal case. The filtering is quite effective.

After all this hard work success should have been ours — it wasn't. At VHF in particular there appeared to be virtually no noise reduction — it was enough to make a grown man cry. What was wrong? Hadn't we done something we should have? What was wrong with our reasoning? We were at a loss. We thought it may have been the bonding of the vehicle itself. We had all the mudguard panels spot welded every 3 inches to the engine compartment; we had the back edge of the bonnet bonded every 3 inches to the fire wall; we had the bonnet cleaned of paint so that it would make metal to metal contact with its hinges and bonding straps; we had the whole of the engine bay, engine mounts and exhaust pipe bonded with zero success. This is probably the stage that many people get to and give up — and I wouldn't blame them. After all this work we were not going to give up. We were going to succeed, and succeed we did.

Initially, we had been unable to obtain shielded spark plugs and these had now become available. KLG-Lodge are the only manufacturers of aircraft style shielded plugs that I know of. We obtained a set of these complete with elbows, fitted them and then listened to the glorious hiss of the receiver when the engine was running, no ignition noise. We did hear ignition noise though — that of passing cars but not ours. The type numbers of the shielded plugs I believe from memory is the same as the plugs that you may be using at the moment, only they are prefixed with the letter S. Shielded plugs are only made to order, I believe, and take about 2 weeks to come through. These plugs cost about 3 times as much as ordinary plugs and the elbows cost about the same as the plugs.

The alternator and regulator also had to be suppressed. The leads from the alternator were all shielded except that the battery lead had a coaxial capacitor wired in series with it and was unshielded. Two more coaxial capacitors were fitted to critical leads from the regulator but I cannot remember which. Later regulators will not require these extra capacitors. The shields must of course be earthed at each end for the shield to be effective. The instruments on the Falcon are fed via a small voltage regulator and this causes noise. Dismantle the instruments and inside either the fuel or temperature gauge will be found a small bi-metal regulator. A small 0.05 uF or similar ceramic capacitor is wired from active to instrument case on the outside and another inside from the regulated line to earth. A small ferrite cored RF choke having about 3 turns of wire through it is wired in place of the pink interconnecting wire in the instrument. This got rid of the pop that was heard every second or so in the receiver. Perhaps not all that annoying, but if suppression is going to be worthwhile the job may as well be done properly. So ends the saga of the suppression of two vehicles. The 3 diagrams will help

you should you wish to try out this method. Another Falcon was suppressed identically to the first with complete success, so it wasn't just luck.

#### COMMERCIAL SUPPRESSION METHODS

For those who wish to suppress their vehicles but do not wish to go to the trouble that we had done in the previous method I would suggest you contact firms such as Robert Bosch (Australia), who do specialised work on vehicle suppression. I have seen some of the suppression equipment used and it is quite impressive. It would take under an hour to completely suppress an average 6 cylinder car. The bits and pieces are easily removed when the car is traded in and may suit the new car with slight modification. These suppression kits are not cheap, but I can see them becoming more common as people realise their value in improving mobile communications.

In the United States of America a variety of suppression kits are advertised from time to time — these may be suitable for use here in Australia but this could not be guaranteed. In the March '74 issue of Ham Radio, page 63, a book called *Eliminating Engine Interference* was described. I have not seen this book, but from the write-up on it would appear to be an interesting and informative book. Being an American book I am not sure how it should be ordered — Magpubs, or one of the book shops who advertise in AR?

#### SETS WITH NOISE BLANKERS

Many people will say that suppression is not necessary on a vehicle if you have a noise blanker fitted to the receiver. This is not strictly so. The noise pulses can be of such amplitude that they overload the front end of the receiver. The end results of the high amplitude pulses can be de-sensitisation of the receiver, cross modulation and in some FM receivers, where the IF selectivity curve is asymmetrical, the noise pulses ride through. The noise blanker is a very handy addition to a receiver but does not replace suppression of the ignition system.

#### QSP

##### VHF PROPAGATION

This is only one of the ways amateurs can justify the portions of the spectrum we occupy — by contributing to the basic understanding of VHF propagation. Conclusion of an article "VHFer's Guide to Solar Cycle 20", in Ham Radio, Dec. '74.

##### 1976 OLYMPIC GAMES

According to RASO (Radio Amateurs serving the Olympics) the 1976 Olympic Games are in Montreal during the summer and RASO intend to organise Canadian amateurs for active participation in permitted facilities of communications not contrary to third party traffic prohibitions.

##### USA PACIFIC ISLANDS LICENSING REGION 3

Looking at the U.S. dependencies in the Pacific it seems that Guam comes under the F.C.C. and there is an amateur radio club on the island which is not affiliated to the I.A.R.U. except possibly through ARRL. This appears to be the pattern in many other U.S. Islands and does not of course help the Region 3 Association in any way. Others of the U.S. Pacific Islands — i.e. the Trust Dependencies — do not appear to come under the jurisdiction of the F.C.C. and no reciprocal licensing arrangements are in force for these areas. In a similar manner it seems that any amateur radio societies on any of these islands also could not join the I.A.R.U. direct.

# TRIO TEST EQUIPMENT

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This is an all solid state, wideband RF Signal Generator which produces low impedance, low distortion RF signals. It is highly dependable and easy to operate, and is a handy working instrument for service benches and electronic equipment production centres.

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## **some useful modifications to the FT-101 series**

The following are modifications which have been made to a FT-101B transceiver. In each case there is no external change and if desired the unit can always be returned to its original state should this ever be desired.

The author has always been of the opinion that unless some very beneficial improvement occurs, it is unwise to make external changes to good commercial equipment as this will almost certainly reduce resale value. Note that these modifications were made to an FT-101B, and due to slight internal layout changes it may not be possible to fit the fan relay (see modification 3) to the FT-101.

## SECTION 6, TO END

As supplied, the transceiver showed a tendency for RF feedback when using an external speaker, RF being picked up by the speaker leads. This was cured by the addition of a 0.01  $\mu$ F 50 volt ceramic capacitor across the external speaker jack (J 12), connecting the capacitor from the green lead to earth.

## MODIFICATION 2

When operating VOX it is often desirable to be able to hold the Tx on for short periods without having to continue speaking to do so. As supplied the PTT is inoperative in the VOX position. By bridging S7 (MOX-PTT-VOX selector) the Tx may be held on during VOX operation by pressing the microphone PTT switch. When this switch is released, VOX operation returns to normal, if the PTT switch is not pressed there is no change from normal VOX operation. A link is placed between the moving arm of S7 and the centre PTT contact so that PTT is available at all times. I did this by carefully placing a bead of solder across the contacts which are adjacent, falling this a short piece of

wire can be used. Care is required to prevent heat from the soldering iron damaging surrounding wires and components. To make the job easier I used an instrument tip on my iron overwound with a simple extension made of 16g copper wire which provided sufficient heat in the confined space to solder the link.

### **MODIFICATION 3**

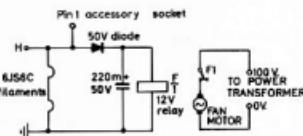
When using the FT-101B with a VHF transverter, or during long periods when the heaters of the 6JSCCs are turned off, it is quite unnecessary for the fan to continue to run. Under these conditions the only source of heat is the 12BY7A driver tube which produces very little heat at any stage. The noise produced by the fan can become irritating during long periods of listening and can even tend to mask very weak VHF DX signals. In addition, considerable amounts of dust accumulate in the final cage over a period of time as a result of the volume of air passing through it.

The addition of a relay in the fan supply circuit operated from the filament line of the 6J5GCs enables operation of the fan to be limited to periods when the tubes are heated. The critical component is the relay. This must be physically fairly small, a 12V type, and capable of switching 100 volts at 0.09 amps. If a suitable type can be found, a reed relay with a 12 volt coil could also be used. Remove the bottom cover plate from the transceiver and check the available space immediately below the electrolytics.

In the author's case, there was sufficient room to fit a small relay on a bracket which was attached to the side of the frame surrounding the power transformer. The dimensions of the bracket and its exact location will depend upon the type of relay used. Ensure that there is adequate clearance from all surrounding parts. Trace the fan supply leads back to the power transformer and unsolder the white lead attached to the 100 volt terminal. Connect another lead to this terminal and then run both leads to the relay contacts, connecting them so that with the relay disconnected the fan circuit is OPEN. Next take a lead from pin 1 of the 11 pin accessory socket and connect this to a spare contact on the relay or a tag strip mounted on the chassis. From this lead connect a diode to one side of the relay coil, connect a 220 uF electrolytic across the relay coil and earth the other end.

Make sure that correct polarity of the rectifier is observed as this circuit must cater for 12 volt DC operation as well as 240 volt AC mains operation. When used on 12 volts DC, the diode conducts and allows the relay to operate. A far simpler way of controlling the fan would be to place an on-off switch in the 100 volt line, but this could easily be forgotten. The

Geoff Wilson, VK3AMK  
7 Norman Ave., Frankston, Vic., 3199



relay circuit is completely automatic and ensures cooling of the final tubes whenever they are used.

NOTE: Some relays may run hot under continuous operation if the voltage exceeds 12 volts. If so reduce the coil voltage by adding a parallel resistor of suitable value and wattage. It is not recommended that this principle be used with the FT401 etc. These transceivers have many valves and continuous cooling is desirable, especially in hot climates.

QSP

W.A.B.C. 1979

The fact of the matter is that in these times the voting strength of the ITU is controlled by several blocks of developing countries in South America, Africa and the Middle East. The League is already embarked on a programme of "selling" amateur radio in these sometimes hostile areas, working with other societies in the IARU. In the months ahead there will be more extensive travel by HQ staffers and by ARRL and IARU HQ staff, by the representatives of the individual IARU divisions. In addition, we are calling on the services of those amateurs whose business travels take them into critical areas and who have the linguistic skill and the knowledge and enthusiasm to bolster the amateur cause. *DST Dec. 7, 1962 Editorial.*

## THE FUTURE OF THE SOCIETY

The RSGB Council, as reported in Nov. 74 Radio Communication had been discussing the future of the RSGB and the outcome appeared to be that the Society must now seriously consider the administrative and economic aspects of a move from London; there must be far greater encouragement to younger members to participate in the Society's affairs and it must do far more to publicise the work that it is doing. The WIA no doubt will also be busily considering its own financial position, judging by comments which came in from some members, "their *sub-custodians*," this issue.

#### MOBILE RX

**MOBILE DX**  
During a recent trip to the Northern part of Queensland, VK2AOK found that a sure way to radiate a good signal on 14MHz at about 0330 EAST, was to transmit from the centre of the Jordine River, 38 miles from the top of Cape York.

All of the operators on the frequency at the time from as far south as VK0, were greatly impressed by the increased signal strength as the river was crossed.

The mobile station used a Japanese transceiver and a small 20 metre vertical antenna mounted on



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# a twelve months study of the 20 metre band between melbourne and london

On the 14th November 1973, Jim G4BGJ, South London, and myself VK3LY, Melbourne, commenced a series of chats on the 20 metre band which in effect continued intermittently for the complete 12 months thereafter.

Everything was going along nicely when about the middle of May 1974, the band went out completely in Melbourne, which of course it had done on previous occasions. However, this particular occasion differed from its predecessors in that it continued to stay out and was now declared extinct. Somehow the band could not appreciate that Jim and I had been in regular contact either in the afternoon or evening (at the Australian-end) for about 6 months. But no matter what my feelings were on the matter the band itself could not care less and like the river just continued on its way.

By this time I of course was beginning to realise that Jim in London would be considering me a very discourteous type of individual — you see I had not told Jim that I would not be back! It occurred to me that if the band itself was not concerned about this lack of courtesy then I most certainly was and so set about finding a way of predicting the irregularities of the mode of communication I had chosen. The idea of a chart occurred to me. Not an ionospheric prediction chart, but a chart which displayed the behavioural pattern of any selected band.

I probably have always been fascinated by the regularity of the passage of the earth in orbit around the sun. Further I have always been fascinated by the fact that the sun shines through the same hole in a centoph onto the same spot each year at precisely the same time as the previous year. I was further fascinated by observations I had made over a couple of years while being a 4th floor employee in a 19-storey building noting the short shadow cast by our building in Melbourne on the 21st December as compared with the very-very-long shadow cast on the 21st June each year. Of course we had learnt of this at school but this was now taking on an added realism, as at the window at which I worked I was able to observe at my leisure and observe I most certainly did.

We are told that above us is an ionospheric region situated somewhere between 50 and 300 miles up. We are also told that this ionosphere is affected by the emission from the sun causing the ionosphere to form a system of layers as our earth rotates. Of course planet earth is not a fixture — it rotates on its axis once in 24 hours — it also travels on an orbital path around the sun completing this journey in 365 days. Well so far it seems as though we have no problems

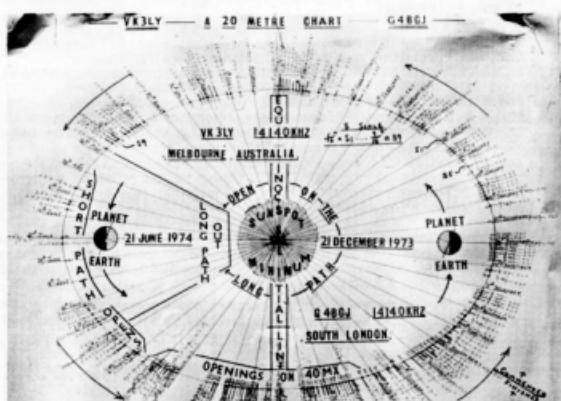
and that all is plain sailing — until we realise that the earth amongst other things, is tilted on its axis by 23 degrees, and this alters the whole situation. One is forced to admit that this trick is tremendously ingenious however, for we have now introduced a system of seasons — summer, autumn, winter and spring. You see now the plot thickens because the poor ionosphere doesn't know whether it is coming or going so to speak — for as stated the earth is rotating and continually presenting a different face to the sun. And because the earth is following an elliptical path it is always at a different distance from the sun to that had it been only on a circular orbit, where at least it would have always have been at the same distance from the sun. So much for the complexities which initiated the idea of the chart.

The chart itself was produced by drawing an ellipse with a looped piece of string and two drawing pins. Try it for yourself — put the pins about three or four inches apart, place the string loop over them, now with a ball-point pen or pencil strain the string loop slightly and following the perimeter draw out an elliptic type path. The ellipse itself is then divided into quarters and subdivided until the segments are reduced to the chart as illustrated. One end of the ellipse was elected as representing the 21st December and the other end as the 21st June, while the 21st March and the 21st September are at their usual positions on the equinox line, or equinoctial line as listed on the chart. From there on divisions and date lines follow evenly. The principle applied was that there are 360 degrees in a circle and 365 days in a year — near enough for one degree to equal one day.

Ron Schmidt, VK3LY  
73 Rowell Ave., Camberwell, 3124

All of the G4BGJ signal strength readings recorded on the chart were taken on the long-path, our normal communication path for that time of the day. The few readings taken on the short-path were from other G stations. The length of the lines drawn are scaled to represent the signal strength of the station being received. S1 being a dot 1/16th inch long, S5 being 5/16th inch and S9 being 9/16th inch long. A line drawn from the perimeter away from the sun in the centre of the chart indicates a long-path contact — whereas a line drawn in towards the sun from the perimeter indicates a short-path contact of which a few only are recorded, there being very few short-path loggings as compared to the long-path. Times are shown as Melbourne time and are listed as Eastern Australian Standard Time (EST) which is 10 hours ahead of Greenwich Mean Time or conversely GMT is 10 hours behind EST. Where no contacts are recorded this is because no signals were coming into Melbourne from G land due to ionospheric disturbances caused presumably by solar flares or solar storms, both associated with the manufacture of a sunspot — be it ever so humble. Some of the solar disturbances put the band out of action for 10 days — another lot for 19 days — thereafter in Melbourne was to occur the longest band drop-out of 72 days or 2½ months, that was from 17th May 1974, until the 29th July 1974. This was on the long-path and the frequency was around 14140 kHz and in the normal time region of band openings between 0500 GMT to 1000 GMT, the times in this

Below is a reproduction from a colour slide of the chart prepared by Ron VK3LY



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segment being of particular interest and were charted accordingly. There was an occasional opening to Spain or Southern France in that time — but to G land — well if you look at the chart you will see an occasional working but it seemed to an exasperated operator in Melbourne, that "never" would have been a nearer truth.

The shortest QSO between G4BGJ South London, and VK3LY Melbourne, was for about two minutes — time only to exchange callsigns when the band faded out. However, that was only on one occasion. The longest QSO occupied us for something like 2½ hours. The average QSO on SSB would have been for about 1½ hours which would also have been about the length of the band opening. SSB was the normal communication mode used. Transceivers at each end were FTDX 401s plus a linear at the G end. Antennas were, at G4BGJ a Mustang Mosley at 40 feet while at VK3LY a 2 element home-brew tribander at 22 feet was operative.

A comparison of charts drawn up by keen amateurs around the world would certainly be most revealing. A chart comparison taken between the Australian cities on the Eastern coast would in themselves be a revelation in displaying the variations of the band over a similar path to any country the amateur operators so elected. This project would call for quite a discipline for the twelve months in that those conducting the experiment would require to be in attendance at band opening times for the sake of recording or not recording on the chart, whichever it turned out to be for that day or night. As stated, a chart comparison taken on the same band around band-opening times at Brisbane, Sydney, Melbourne and Hobart in Australia in itself would be tremendously interesting as each of these capital cities are almost on similar longitudes while differing satisfactorily in latitude for the exercise. The times given on the chart purport to be band-opening times. These became very accurate as the operator became adept in recognising and observing the opening to G land. The commencement date for the taking of readings was the 14th November 1973, and the final reading was the day before that date in 1974. I define the band-opening time as being that time at which the G station became readability 5. On first hearing the G station, the time and signal strength is immediately logged together with the dial frequency-reading, being recorded on scrap paper initially for comparison purposes while scanning the band, the final signal strength being recorded on the chart; in short you sample the band.

Because of the rotation of the earth from west to east the New Zealanders hear the G stations open before the VK3 stations. As a result of this it is not uncommon to find yourself listening to the ZLs working the Gs for perhaps a ½ hour or so before the Gs are even being heard in Australia. This in itself is an interesting experiment in that it makes it easy to hear the birth of a G station from nil heard,

to the eventual final signal strength at which that particular signal is going to settle down. Only temporarily of course, for the life of a DX signal on the high-frequency bands is normally of a very temporary nature. The birth of the incoming signal when it starts can be from 2 minutes to perhaps 10 minutes before it reaches its maximum signal strength, its final strength being predetermined by conditions associated with the ionosphere, power into the antenna at the transmitting end, and the antenna height and gain. At the receiving end we have exactly the reverse situation except that the receiver takes the place of the transmitter. This of course presupposes that locations are normal and that directional antennas are being used for best DX communication purposes and are of course beamed correctly towards one another.

From the series of observations taken in constructing the chart it became obvious that the boys around Sydney were generally able to contact G land slightly earlier (because of the slight longitude difference) and more frequently than their counterparts in Melbourne. This applied particularly when solar activity was having an adverse effect on the band down Melbourne way; it was not uncommon under those conditions to hear the Sydney boys working and giving the G stations normal signal reports. Under those conditions of course the more southern VK3 knows instinctively from his acquired experience of the band that this is not his night. However, this is not necessarily the end of things for it is not uncommon for conditions to change slightly and favour the VK3 more than previously.

In summarising the advantages of this particular type of chart over the normal ionospheric prediction chart I would say that this particular chart provides the operator with:—

(i) a fuller comprehension of the band by providing a better understanding of its behavioural pattern,

(ii) an indication of temporary band drop-outs of a periodic nature,

(iii) and indication of winter (at the Australian end) band drop-out as well as an indication of a return to continuity of communication for the remainder of the year,

(iv) a rough prediction of probable repeat performance for guidance purposes for the following years, or year at least,

(v) a once in your life comprehension of the band under observation.

Statistically on the chart there are 130 contacts with G4BGJ, 32 G contacts not G4BGJ, plus 12 G stations heard with signal strengths recorded, altogether making a total of 174 recordings. These in their turn produced the final chart. The chart shows an average of one contact every second day throughout the year, remembering that there was a time during the winter months at the Melbourne end when signals stayed out for 2½ months; although a rebirth was around the corner and patience was to eventually win the day.

On discussing the chart with a Canadian who enquired about the principle on which the chart was established, I repeated the opening story of the cenotaph, which brings us back to a repeating cycle of events. In short if there was no sunspot activity ever to cause magnetic storms then the band would not go out as spasmodically as it now does, and you would be left to presume that you would have an even flow of communications at the normal contact times. It should be noted that the solar storm does something else which is not immediately obvious — as stated the solar storm causes the upset in the ionosphere and the result caused by the upset may take place for perhaps 10 days, after which the ionosphere resettles — but here is the point — it now resettles not at the point where it was before the band went out, but resettles at a point which is in direct accordance with the earth's new position on its orbit in space around the sun. If there were 10 days of disturbance the planet earth would have travelled 16 million miles further on its elliptic-path journey and the result of this is that the band would now come in earlier or later than that where it was before the sunspot disturbance under discussion (which produced the resulting magnetic storm). Whether it is earlier or later depends upon whether the earth is heading datewise towards the 21st December which is the longest day at the Melbourne end or the shortest day at the London end and which is recorded on the chart as the 17th December (possibly due to the tilt of the earth's axis from the vertical). For the purposes of straight reading it would be better to put aside this slight discrepancy as that type of change can be a separate study in itself. Let us proceed. On the chart as you approached the 17th December the band in Australia opened to G land later, opening in London also later, for the length of the piece of string holding London and Melbourne together for the purposes of this exercise, does not alter, the band opening being now around 1000 GMT; conversely, as the earth moves away from the 17th December towards the 21st June the time of band opening becomes earlier — i.e. 0530 GMT with the intermediate times of opening being proportionally distributed along the intervening date points on the chart. Inserted on the chart you will find references to 40 metres and an occasional reference to 15 metres. Please consider these as extras in terms of G land openings to Australia and they were not really associated with the main project, that of course being the study of the 20 metre band only.

Having now completed the elliptical trip around the sun on planet earth and having covered something like 583 million miles you now may have a better appreciation of the digestive troubles had by the ionosphere in endeavouring to adjust to its changing surroundings; in spite of everything, the band does have a tremendous element of logic despite a seeming multitude of inconsistencies.

# DICK SMITH ELECTRONICS CENTRE



Professional  
THROUGH-LINE  
SWR & POWER  
to 2kW

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SWR Power Meter  
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### ZIPPY BOXES

Here's the basis for project builders who want to use standard electronic components in their projects. These boxes are moulded in ABS, as they are tough yet easy to drill. They have a large front panel with two mounting posts in each corner to take self tapping screws and a printed or etched circuit board. They are available in a range of sizes. Special panels are also available made of balsa wood or MDF and metal board at 60c. These boxes are:

Size U81 15 x 9 x 5.5cm \$2.00

Size U83 12.5 x 6 x 4 cm \$1.65



### GRAB THESE



Only \$48.50

### SWR Meter

Type:

Ranges:

Frequency Range:

Impedance:

Full Scale:

Maximum Power:

Directional Coupler

1 to 1000W, 400W x

300W to 200W

75 ohms & 50 ohms

50W at 3.5 MHz

15W at 7 MHz

5W at 14 MHz

2.5W at 21/28 MHz

0.5W at 50/144 MHz

Power Meter

Type:

Ranges:

Through Line

0-2000, 0-20W, 0-2kW at 7/14/21MHz

0-200, 0-20W, 0-2kW at 28 MHz

Accuracy /

Safety Rating:

0-2W, 0-20W, 0-200W at 50/144 MHz

0-2W, 0-20W, 0-200W at 21/28 MHz

0-2W, 0-20W, 0-200W at 50/144 MHz

0-2W, 0-20W, 0-200W at 28 MHz

Meters:

Connectors:

Dimensions:

Weight:

0-2W, 0-20W, 0-200W at 7/14/21MHz

0-200, 0-20W, 0-2kW at 28 MHz

0-2W, 0-20W, 0-200W at 50/144 MHz

0-2W, 0-20W, 0-200W at 21/28 MHz

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0-2W, 0-20W, 0-200W at 50/144 MHz

0-2W, 0-20W, 0-200W at 28 MHz

0-2W, 0-20W, 0-200W at 50/144 MHz

# VHF UHF

## an expanding world

with Eric Jamieson VK5LP

Forreston, S.A., 5233

Times: GMT

### AMATEUR BAND BEACONS

|     |                          |         |
|-----|--------------------------|---------|
| VK0 | VK0MA, Mawson            | 53.100  |
|     | VK0GR, Casey             | 53.200  |
| VK1 | VK1RTA, Canberra         | 144.475 |
| VK2 | VK2WI, Sydney            | 52.450  |
| VK2 | VK2WI, Sydney            | 144.010 |
| VK3 | VK3RTG, Vermont          | 144.700 |
| VK4 | VK4RTL, Townsville       | 52.600  |
| VK4 | VK4WI/1, Mt. Mowbray     | 144.400 |
| VK5 | VK5VF, Mt. Lofty         | 53.000  |
| VK5 | VK5VF, Mt. Lofty         | 144.800 |
| VK6 | VK6RT, Perth             | 52.300  |
| VK6 | VK6RT, Adelaide          | 52.350  |
| P29 | VK6RTW, Geelong          | 52.350  |
| 3D  | VK6RTW, Albany x         | 52.850  |
| ZL1 | VZ1VHF, Auckland         | 145.100 |
| ZL1 | VZ1VHF, Waikato          | 145.150 |
| ZL2 | VZ2VHF, Wellington       | 145.200 |
| ZL2 | VZ2VHF, Palmerston North | 145.250 |
| ZL3 | VZ3VHF, Christchurch     | 145.300 |
| ZL4 | ZL4VHF, Dunedin          | 145.400 |

x denotes addition

Beacon news this month shows the new Albany 6 metre beacon with a listing on 52.950, and reported heard by Kerry VK5SU at Ceduna. It uses slow CW with 5 watts output presently to a 5 element beam pointing east, but an omnidirectional antenna is planned for the beacon. No news has been heard of the Darwin beacon VK8VF since the cyclone, so it can only be presumed to be lost along with so much other damage, and I guess there are more important things to do in Darwin at present than worry about the beacon. However, probably something will be heard about it by the time the next DX "season" comes around at the end of the year.

### SIX METRES

This band seemed to be behaving in a somewhat unusual manner this "season". Excellent early openings were observed to all States in November, a strong frequency indicating something was going to happen early. Possibly the best way of going over activities would be to pick out some of the highlights as I saw them, and with some news from other areas to complete the picture.

One of the highlights would have been the copying of the Fiji beacon 3D3AA, by VK7JV and VK7ZAH on 22/11 November for 15 minutes with signals 5 x 3. Distance would be over 3000 km. About this time news came to hand that VK8VF, the Darwin beacon, was operating as a transponder and was capable of giving signal reports back to the calling station . . . 16/12 Rod VK2BQJ (ex ZQJ) reported digging in the garden — consequently missed working ZL4s . . . John VK4ZJB worked some JAs on this day . . . 26/12 all ZL districts 1 to 4 worked 27/12 VK7ZAH heard 3D3AA beacon, and later worked VK2BKE on Lord Howe Island, who was using an FT200 driving FT650. Jim VK5ZMJ also worked VK2BKE. Good work chaps. ZLs still available . . . 1/1/75 open to all. Started all day to VK4 . . . 10/1/75 can't find unconfirmed that Clive VK5ZCV heard SSB in Timor/Trincomalee . . . 4/1 ZLs again including ZL4PG (David) . . . From the end of the first week in January conditions tapered off quite markedly, or the operators did, but openings did continue intermittently most days culminating in a good opening to VK8BV and others in Kalgoorlie on 28/1/ and a very strong opening to VK1 and VK2 on 29/1.

Summing up my impressions of six metres this time: not as many good openings or contacts to VK3 as some might expect . . . VK2s very noticeable by their absence, commented upon in many circles . . . Activity in VK6 quite high with many excellent signals . . . northern VK4 prominent, some Brisbane activity, but no doubt hampered by Ch. 0 . . . most stations operating SSB now, many using

FT620 barefoot, with about 10 watts output, others using same to drive fair sized linear, therefore many strong signals. Several good, strong, well modulated AM stations noted, mostly matching it with the SSB boys . . . weaker AM stations noted often working quite well further up the band — good idea to get out of the QRM if crystal locked — noticed they went up further of their own free will! Band operating manners very good, never heard a cross word from anyone, and most operators indicating they would move off the frequency on completing a contact so leaving the position to the original station; nice thought boys.

### TWO METRES

As predicted last year, two metres was again available this year for long distance sporadic E contacts, and there were some very interesting ones. I think the letter from Kerry VK5SU would sum up most of the two metre operating, as here are some extracts for your interest. Again, these times specifically are Eastern Summer Time so you can better associate the time or day with the activity indicated.

|       |      |                     |   |
|-------|------|---------------------|---|
| 22/11 | 1115 | Adelaide repeater   | Ch. 4 worked.   |
| 23/11 | 0700 | Ch. 4 again worked. |   |
|       | 0815 | VK5BC               | heard 144.103 S6 CW, S3 AM.                             |
|       | 1005 | VK5LP               | S1 SSB 144.107. Also via Ch.                            |
| 7/12  | 0845 | VK3ZAZ              | Balnear worked via Adelaide Ch. 4 repeater.             |
|       | 0930 | VK5CU/5             | mobile Adelaide worked Ch. 50 and B.                    |
| 15/12 | 0835 | VK2YDK              | in QSO on Ch. B.  |
|       | 0850 | VK2ZAY              | Gunnedah 144.1 SSB 5 x 4 via Es.                        |
| 16/12 | 1218 | VK5ZK, VK5ZTS       | 144.1 SSB.  |
| 21/12 | 2020 | VK2ZAY              | Gunnedah (1636 km) 144.1 5 x 3 SSB via Es.              |
|       | 1225 | VK2ZCV              | at Tamworth 144.1 5 x SSB.                              |
|       | 1251 | VK2ATI              | mobile Ballina (1974 km) on Ch. B. 5 x 4 Es.            |
|       | 1253 | VK2YBZ              | portable Evans Head near Ballina Ch. B. 5 x 9 Es.       |
|       | 1254 | VK2ZB               | and called by VK4ZB Brisbane Ch. B. No report obtained! |

|       |      |        |   |
|-------|------|--------|---|
| 23/12 | 1029 | VK2ZRH | Sydney 144.1 5 x 9 SSB.   |
| 29/12 | 1200 | VK5NC  | Mt. Gambier.  |
|       | 1735 | VK5OK  | Mt. Gambier CW 5 x 4.   |
| 30/12 | 0820 | VK5ZT  | Adelaide.   |
|       | 0826 | VK5ZT  | via Ch. 1 Mt. William (Vic.)  |
|       | 0838 | VK5ZT  | 1100 VK5MT, VK5MC, VK5RO, VK5LP, VK5SPS, 144.1 SSB.   |
| 5/1   | 0733 | VK3ASW | VK3ASW and VK3ZVL/3 60 miles east of Melbourne via Mt. William repeater, also VK3TN aero-nautical mobile via Ch. 1. |

Now that's a pretty fair effort, and shows that the interest Kerry is able to give to the game has allowed him in a very short while to make some very good contacts. I would like to add the following bits as well before summing up the two metre situation.

During the 2 metre opening on 21/12 Jim VK5ZMJ at Port Pirie in the mid-north of SA was worked 22 stations in VK2 and VK4 using SSB and Ch. B FM. That's a pretty fair effort too. On 16/12 Tony VK5ZDY and myself worked Daniel VK7ZDA, and was the only reported occasion (to me) of VK7 to VK5 this year . . . Around 1/12 a report was received from Sydney that QRM was being experienced in that city to the international PMG system from a station in Hawaii just below the 144 MHz band! Now that's a long way — perhaps someone should have VFO'd down and told them to come up into our band for a contact . . . VK5ZMJ, Adelaide, beacon heard in Perth on 29/12 by VK6ZCN and VK6ZFY . . . Numerous reports of cross Eastern States openings VK3 to VK4, VK3 to VK2, VK2 to VK4, much short skip around top end of VK4, Bundaberg to Rockhampton for example.

Taken all round, it was a great time for 2 metres, both SSB and FM. It shows how one mode can help the other. Having operators fairly constantly using FM on fixed channels gives interested operators the chance to monitor something, and it looks as though Ch. B (40) will remain a pretty popular frequency for a long while, despite Ch. 50 being nominated as a national calling frequency.

Looking back at the FM scene one could probably say more stations in Adelaide in particular would probably have worked into VK2 and VK4 on FM if they had better antenna systems — the idea of a small vertical antenna is fine for cross town working, but when the guns are out, you need something better. A 5 or 6 element beam doesn't cost much to build, and the ideal would be one for both vertical and horizontal polarization — there are some operators around who only have horizontal, but certainly 5 elements at least vertical would be a great improvement. So what about it you guys. Get on the job ready for next November and December when there should be sporadic E openings on 2 metres again.

Summing up, 2 metres was really good this year, helped by plenty of stations having equipment on one or other of the sections of the band, and in general having better equipment than that of a few years ago. More vigilant operators help to keep signals on the various frequencies and in turn more people hear them. It would be nice to see more stations migrating to the lower section of the 144 MHz band. In the winter the sentiments I expressed last month about using the 2 metre band — we don't want commercial stations operating right up alongside even the FM channels — or do you? With so many operators now having SSB equipment on 6 metres, it is not an enormous task to utilise the SSB portion of that gear for 2 metres, a 52 MHz exciter unit, coupled to a 144 MHz transmitter with the use of a 92 MHz oscillator chain will start you on the way if you are not keen on starting the SSB at some lower frequency. There are plenty of QO60/12 valves around for 15 watts or so at 144 MHz, the QO60/12 will give you 40 to 50 watts and a QO60/40 double that, and none of these will cost you a fortune to get going. It's essential more of you blokes give very serious thought to getting off the FM channels at times and spread your interest to other areas of the band, or you may live to rue the day that you did not do something about it. Channel 5A is coming!!!

### PORTABLE OPERATION

Well, the big portable operation I started out on just after Christmas ended in disaster! The first day (25/12) was very pleasant and many 2 metre contacts were made, plus 6 metres of course. That night the winds shifted to the north, first bringing with it a violent thunderstorm and drenching rain. I was out at 2.30 a.m. battening down everything, finishing up with 9 guy wires on the mast with the 6 and 2 metre antennas and rotator. Gradually the winds shifted to the west and increased in violence until they were so bad that I had to pack up my equipment and head for Myponga Hill in search of 40 knots, threatening to tear everything apart. I spent most of the night standing up in the caravan in one corner holding it down against the wind which was raising the van 2 to 3 inches with each gust. The rain still poured down. My only comfort was the torch. The alternator was outside covered down (hopefully) so couldn't give me any cheerful lights.

Next morning the rain slowed down, but the winds continued to rise in strength, and anger. I tied the caravan down as best I could with baling twine and iron droppers. When the rain finally stopped, I uncovered the alternator, and got it going, deciding I might try my luck on the bands despite the winds. All the equipment was safely housed in a Kombi van, which weathered the storm well, and kept everything quite dry.

From time to time I had to sweep off the operating table because of the fine sand being blown onto it. The antennas (4 el. on 6, 10 el. on 2) took an awful hammering, and so did the very plucky rotator, but they all held together. By mid-morning I couldn't stand watching the caravan sit on the ground a few inches with the stronger gusts, so decided to pack it in — much to my disappointment.

Summoning some nearby help I was able to finally get the mast and antennas down in one piece. How I still don't know. The rotator was encrusted with salt from the spray off the sea, and then I realised from where all the sand had been coming on to the table. The map showed I was 9 miles from the nearest part of the ocean, yet the winds were so strong and unabating that they never allowed the spray or sand to drop once it became airborne. What an ordeal! I'll go out portable again one day of course, but I don't think to Myponga Hill — too exposed to the

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6000, Phone: 25-5722, 25-5902.  
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5092. Phone: 64-3296.

elements, but what a pity, such a beautiful site for VHF. If only to console myself to a degree, I did hear eventually that some of the VK3 boys also packed up due to adverse conditions, so I didn't feel quite such a chicken after all.

#### MOONBOUNCE

Congratulations to Chris VK5MC for his continuing success with 144 MHz moonbounce. At 1105Z on Saturday 30th November Chris contacted VE2DFO and WBKPY on CW, then a 2 way contact was successful with WBKPY on SSB, which looks like being a VK first for SSB moonbounce. Chris sent 5 x 5 and received S2 back. Chris used 150 watts input for CW and 300 watts PEP output for SSB, to 4 stacked rhombics 50 wavelengths per leg length. Converter uses U310 FET for the front-end situated at the antenna feedpoint, and then coupled to a pair of MPP121 FETs. Trevor VK5NC was in the shack at the time and was witness to the successful contacts.

The Dapto (NSW) boys have run into trouble with their transceiving equipment with extensive damage caused by a nearby lightning strike. Diodes and transistors have had to be replaced in the power supply, defective coil in the control system, faulty coaxial relay, transmitter multiplier board and receiving converter oscillator chain transistors etc, all need repairs. In addition the valuable 575 transistor in the front end of the converter whilst not destroyed shows a marked deterioration in noise figure, so it appears it will be several months before the equipment will be operational again.

From Roger VK2ZFB comes news that Andrew VK6ZCN is starting on a 144 MHz moonbounce project, and tests are scheduled to commence in March with 600 watts CW to a bay of 4 x 14 el. (112 el. total) crossed Swan yagis spaced approx. 4m with mesh reflector and will have the capability of reversing sense of polarization.

News is also to hand that Barry VK2ZAY in northern NSW is starting out on moonbounce and is currently looking for a suitable receiver. No other details available at the moment, but Barry will let me know in due course of his experiments.

#### METEOR SCATTER

Results of Geminiids Complex meteor scatter skeds on 13th to 16th December 1974 between VK5TZ and VK6ZGO at Kalgoorlie on 13/12 a.m., VK6TZ-VK6ZBM at Kalgoorlie and VK6TZ and VK5SSU on 14/12 a.m., VK6TZ-VK6ZBM on 15/12 a.m. and p.m. and VK6TZ-VK6ZBM 16/12 a.m., on 52.100 SSB. Ross Hull numbers were passed on each of the 5 m/s sked sessions with Kalgoorlie and Kerry VK5SSU was heard on 14/12 in Perth off the back of VK6ZBM's beam! Others participating were VK6ZGZ and VK6ZLW. Jessie VK6ZQ went portable to Esperance and with vertical whip heard returns from Perth. Hour rates for 14/12 were 15/12 600; and 16/12 704. VK6TZ used 250 watts PEP into QO6E/40 with 5 el. beam at 50 feet, FT820 driver.

#### 52 MHz FM SURVEY

Latest news from George VK3ASV indicates the world-wide standard 6 metre calling FM channel of 52.525 MHz is slowly growing in activity in Australia, especially northern VK4, replacing the old AM net frequency of 53.032 MHz. In addition to the FM net in Brisbane, many stations have moved away from 53.032 and now operate on 53.595. The Hobart net has been suggested as suitable for use in VK3 to reduce Ch 9 TV1. 52.525 FM was quite active during the last DX season in Melbourne, but has since gone rather dead.

In VK6 the primary channel is 52.656 and secondary 52.765 MHz. VK5WI re-broadcast their Sunday morning news on 52.656 also. The WA VHF Group Bulletin in November 1973 proposed a 6 metre band plan, viz. FM nets 52.500 to 52.800; AM nets 52.600 to 53.300. Experimental 53.300 to 54.000 MHz. VK6 also have used 52.586 as an AM net.

In NSW we find 52.656 used in some locations, but the primary FM net appears to be 53.950 in Sydney, especially for WICEN. The VK2 Division broadcast by VK2AWI is on 52.525 FM and 53.666 AM and VK2BWW on 53.682 AM, both in the Wollongong area. This is the only AM net in the VK2 Division. Other AM nets used in VK2 are 53.786, 53.826, 53.866 (primary AM), 53.820 (South Coast), 53.982 (Wollongong). Also 53.536 MHz has been used as an FM net. George adds — "What a mix-up!"

SA, including Alice Springs, use 52.525 FM, the

main AM net being 53.100 MHz. Neither of these two frequencies are used by VK5WI; instead broadcasts are made on 52.150 using tunable equipment and SSB.

Victoria, South Australia and Tasmania still use 53.032 AM, but its use appears to be dying out. VK7WI and VK3WI up to recent times used 53.032 AM for their broadcasts.

At the VK3 VKH Group meeting last March, John VK3ZMA advised two new 6 metre AM nets had been started in the Melbourne area, namely 52.500 and 53.100 MHz. In conclusion George adds he would like to see AM nets fade away, unless only for beginners up near 54 MHz away from TV, and more use made of low power 6 metre FM nets.

Thanks George for the information, which came via VK2ZTB. The most important point to come from your survey is the need for some semblance of order to be arranged for 6 metre net operation, whether AM or FM.

That will have to do for this time, there is quite a lot more which could be written, but due to the time lag at the moment, much of the news is too old for inclusion. Closing with the thought for the month: "The way some people find fault you'd think there was a reward!"

The Voice in the Hills.

#### STOP PRESS 432 MHz RECORD BROKEN

On Sunday, 2nd February 1975, a two way contact on 432 MHz was successfully completed by Wally VK6WG in Albany and Les VK3ZLW in Melbourne. Signals were not strong, Wally used CW and Les SSB. Distance about 2440 km. That now narrows down the field for anyone wishing to extend the distance further; eastern Victoria or Tasmania remain about the last chances unless someone makes it to New Zealand. Good work boys, let us hope it acts as an incentive to others to get on 432 MHz.

#### BIG 144 MHz OPENING

For days the 2 metre enthusiasts in VK3, VK5 and VK6 have been watching the build-up of conditions suitable for long distance 2 metre operation. Finally with a zone of high pressure extending right across southern Australia conditions came right. First news came on 31/1 with Wally VK6WG at Albany working into VK5, also Aub VK6XK. Then Bob VK6BT was noted working Harry VK3XI on Channel B FM, and later VK5ZOO. Saturday conditions continued good right through to mid-day, then Sunday evening produced its share of signals together with the 432 MHz record. Bob VK6BEE who deserves some reward though, keeping up 40 minutes stations almost daily with VK5 and VK6L. VK6L worked 10 VK4 and 16 VK3 stations, 144,100 SSB for a total of 67 contacts which is a pretty good effort. Bob commented that signals were up to 5 x 9, best contact being with VK3BMD who was operating mobile in Melbourne running 20 watts PEP to a five-eight wavelength whip. That's hauling them in! Bob also added that VK3 had been worked via the Albany Ch. 2 repeater. Sunday evening contacts to Bob from VK5 were not over strong, but Garry VK5ZK and Peter VK5ZPS were able to work him. I had to listen to the others as Bob was too weak here. Garry commented that it was interesting that was possible to work Bob on 2 metres but not on 40 metres. So much for VHF.

So that's the review of the diversified operators. Those confined to repeater operation miss out on so much. Even after many years on VHF I still get a thrill from working someone long distance away, with my own equipment, not that provided by someone else on a hill. And how very interesting it becomes watching the weather patterns emerge, finally to note conditions are right. This time the ducting or inversion was confined some distance below the continent, restricting operation to those more favourably situated near the coastline, particularly Mt. Gambier and Victoria.

#### LATER ON MOONBOUNCE

On 14/12 a Ch 9 VK5MC called WBKPY on CW, received 448, sent 549. Heard K4IXC, then WBKPY called on SSB, Ch9 received 4 x 4, sent 5 x 4, WBKPY heard for three consecutive periods of 2 minutes. Both Ron VK3AKC and Trevor VK5NC present on

those occasions.

On 21/1 heard 3 stations, but not well. And not always in right spot for moon position.

Trevor VK5NC in Mt. Gambier with his 56 elements on 2 metres has heard the VK5MC echoes, also unidentified CW. Ron VK3AKC has improved his control system for 1296 MHz, now hearing good echoes 3 dB above noise consistently.

## Contests

with Peter Brown VK4PJ

Federal Contests Manager, G.P.O. Box, 638 Brisbane, Qld., 4001.

#### CONTEST CALENDAR

|       |         |                   |
|-------|---------|-------------------|
| MARCH | 1 & 2   | ARRL DX Phone     |
|       | 8 & 9   | BERU CW           |
|       | 8 & 9   | YL-CW CW          |
|       | 15 & 16 | ARRL DX CW        |
|       | 22 - 24 | BARTG Spring RTTY |
|       | 29 & 30 | CO WW WPX SSB     |
| APRIL | 5 & 6   | Polish (SP)       |
|       | 12 & 13 | Swiss (H2)        |
|       | 26 & 27 | WAEDC RTTY        |

#### CONTEST DETAILS

A small number of overseas radio associations send full details of the rules of their forthcoming contests to the WIA and these usually arrive several months in advance of the contest date. It is not practicable to publish these rules and scoring tables in full as most would require a page of text. Most contain information and details of the contest is supplied to the WIA, WIVY and this arrives in about the middle of the month. Unfortunately the detailed info generally refers to contests which are to be held during the next calendar month. As copy for our magazine for that month must be with the Editor by the third of the preceding month it is frequently not possible to include as much contest information as some readers would like. However, if you send a SASE to me at Box 57, East Melbourne, 3002, the detail will be forwarded to you.

#### 1974 WPX SSB RESULTS

Frank, W1WY sent these out by airmail together with the following comment, "Not a bad showing for VK, but think you fellows could do better".

#### OCEANIA — Australia

|        |    |         |     |     |
|--------|----|---------|-----|-----|
| VKA1OP | A  | 111,006 | 335 | 128 |
| VK2OW  | A  | 8,358   | 71  | 42  |
| VK4IVU | A  | 274,247 | 642 | 139 |
| VK4FH  | "  | 182,932 | 536 | 116 |
| VK4AK  | "  | 21,375  | 110 | 75  |
| VKSNO  | A  | 351,770 | 838 | 145 |
| VKSMP  | "  | 74,960  | 233 | 92  |
| VK2XT  | 21 | 31,977  | 323 | 33  |
| VKS3M  | 21 | 23,779  | 192 | 43  |
| VK4PQ  | "  | 74      | 19  | 14  |
| VK6ZPK | "  | 229,824 | 479 | 171 |
| VKGK   | 14 | 89,975  | 251 | 129 |

#### ROSS HULL MEMORIAL CONTEST

Only two logs to hand up to this date, 29th January. A VK3 has 99 QSOs on 2 metres and 43 on 6 metres. A VK4 well north of Brisbane has 225 QSOs on 6 metres. There are some letters to hand and a few of them comment on the very limited opportunities amateurs in the Brisbane, Wagga and Melbourne areas have to use 6 metres. Another refers to similar restrictions in an area where TV Channel 5A limits 2 metre operation.

It is also suggested that the contest runs for too long a period; that there are better times in the year for VHF working; and that to score accurately one needs to be a mathematician with a very good atlas supplemented by detailed road maps of the various states. Then, if you have those qualifications and the equipment, there is the time necessary to calculate the distance of each QSO. Fortunately most writers, while being critical, also include constructive suggestions. However, all have stated that they enjoyed the contest.

Well, I would not attempt to draft new rules for the Contest as it seems that special sections must be carefully defined. With that in mind have requested that a committee be set up to "over-haul" all the contest rules and scoring tables. Recommendations can then be made and you, the contestants, should have the opportunity to comment before final decisions are made.

## BERU 1975

A reminder that this contest will run from 1200Z Saturday, 8th March to 1200Z Sunday 9th March. Rules as modified in AR for February. Trophy medallions to VK winner and middle placing.

### RESULTS BERU 1974

|        |     |       |     |
|--------|-----|-------|-----|
| VK2BPN | 175 | VK3KS | 480 |
| VK3ZG  | 815 | VK3RJ | 275 |
| VK2ZJL | 580 | VK3KX | 215 |
| VK6RU  | 565 |       |     |

The Receiving Contest was won by Eric Trablicock BCRS 195 who receives the Receiving Rose Book. VK silver medallion VK2BPN, Bronze VK6RU.

### Awards Column

with BRIAN AUSTIN VK5CA  
P.O. Box 7A, Craters, SA, 5152.

#### 9G1 AWARD

The award is available to licensed amateurs. Contacts on all bands for January 1958 are valid.

The applicant's own QSL cards for the Ghanaian stations with whom contact is being claimed must be included with the application.

The award is available for all CW, all phone or mixed modes.

The fee for the award is 7 IRCs.

The address for application is:  
QSL Awards Manager  
Post box 3773  
Accra, Ghana.

Requirements: Confirmed contacts are required with 5 different 9G1 stations using at least two bands.

#### 5M AWARD

The award is available to licensed amateurs and shortwave listeners (on a "heard" basis). Contacts with 5M stations are valid.

Do not send QSL cards. A list, showing full details of the contacts should be certified by the Awards Manager of a National Society.

The award is issued for all CW, all phone and mixed modes.

The fee for the award is 5 IRCs.

The address for application is:  
Nigerian Amateur Radio Society,  
Post Box 2873  
Lagos, Nigeria.

Requirements: Confirmed contact with 5 different 5M stations are required.

#### P.A.C.C.

The award is available to licensed amateurs.

Contacts on all and after 1st June 1945 are valid. Do not send QSLs. A list showing full details of the contacts should be certified by the Awards Manager of a National Society.

The fee for the award is 7 IRCs.

The address for application is:  
Traffic Bureau VERON, C/o PABAAC  
Post box 1166  
Arnhem, Holland.

Requirements: Confirmed contacts are required with 100 different PA/PI stations. Stickers are available for 200 and 300 contacts.

**Special Note:** VERON organises an International PABAAC contest every year, during the last weekend in April. Contacts made during this contest count without QSL cards provided that logs have been submitted by the PA/PI station for checking purposes.

#### DARWIN RELIEF FUND

The following donations to the WIA's Darwin Relief Fund for members who lost equipment in Darwin arising from Cyclone Tracy are acknowledged with grateful thanks—

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|--------|-------|------|
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| VK7MX  | ----- | \$10 |
| VK3LO  | ----- | \$50 |
| VK7JU  | ----- | \$2  |

The Executive

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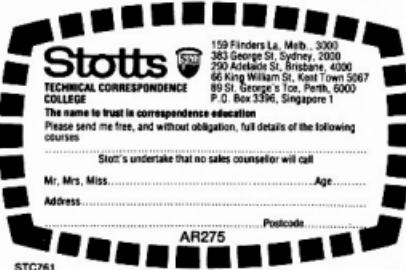
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## Letters to the Editor

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the Publishers.

The Editor,  
Dear Sir,

I would appreciate it if you would make the following matter as widely known as possible.

Until January of this year, I had the call sign VK2HT and had been a member of the WIA for 15 years. In May 1973, I had a severe heart attack, and was in the hospital four times in the year.

I realised I would have to retire from my profession, and gave up all my gear to various clubs. I surrendered my licence and resigned from the WIA reluctantly. I went to live in a small unit where aerial systems were impossible. My problem is that for a few past years there is a very active pirate who uses my call sign VK2HT, and for several years I have been getting a flood of DX cards for contacts he has made in my name. He has the nerve to use my name and address (former) and I have been greatly embarrassed by his activity. I would like to know that VK2HT is now no longer a legitimate call sign. I would appreciate it if anyone can catch this pirate and let me know, and I shall take legal action against him. He is still very active. Recently, I had an official letter from Germany asking for details of a QSO a month or two ago, as they were suspicious about the call I have not made a call on the air for nearly two years.

If you would supply me with information I would be very glad to take steps. The pirate is very familiar with my, or what was my setup, and is very active. Is there any way that he can be nailed and stopped, as he is still active and cards especially from Japan are coming in?

Thanking you for all the years of good fellowship and wishing you well with many new recruits in the coming year.

73,  
(Rev.) Harry Harris  
5/25 Etonville Parade,  
Croydon, NSW, 2132

The Editor,  
Amateur Radio  
Dear Sir,

Townsville Pacific Festival Results for Contest.

Re the abovementioned contest results, it would be appreciated if a correction could be published.

In the published results I omitted to include the score of VK1VP.

Score for VK1VP was 150 points in section 'A' and was the highest score for VK1.

R. R. Kearney, VK4HE  
Queensland Contest Manager

The Editor,  
Amateur Radio  
Dear Sir,

In reply to the letters in AR January 1975 about the increase in licence fee, a number of points need to be discussed:—

1. Mr. Morris implies that amateurs are paying considerably less than the "poor" commercial operator. Unfortunately as an amateur I cannot use my radio for the purpose of gaining income nor can I claim the licence and equipment costs as a tax deduction thus effectively halving the cost of these items. My radio actually COSTS me \$12 whereas the majority of commercials would be savings costs or actually making money from their operations.

2. If Mr. Watkins had been a complainer he would have, like me, received a letter from the PMG which clearly illustrated how little our political masters realise what amateur radio is and what contribution it makes to the community. The important crisis when it comes will most surely be settled against us in the present climate of opinion. We must be sufficiently politically aware to realise that without continual representation of our interests to parliamentarians and bureaucrats we will most certainly be ignored as insignificant and ineffectual. However, if we choose to represent our case at every turn against us, and the fees increase is an ideal opportunity,

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then we will avoid losing the majority of the 144 MHz and 432 MHz bands to the commercials, as so beloved by Mr. Morris. These same commercials realise something amateurs do not; they are prepared to employ considerable monies on direct and indirect lobbying . . . even to the extent of fostering a feeling of helplessness in the ranks of amateurs, perhaps.

Amateurs must stop being ostriches. Politicians hold the power of life or death over our hobby and we must not give in. If we "keep our eyes" and keep quiet when we are disadvantaged. There are plenty of others waiting in the wings to knock the amateur and take over our frequencies for the purposes of commercial profit.

Yours faithfully,

R. Martin Luther VK4VU

Editor,  
Amateur Radio

Dear Sir,

With reference to Eric Jamieson's VHF/UHF column of December 1974 AR I wish to take issue with several of his inferences.

I cannot believe that the opinion of the bulk of SSB tunable stations in the 6 metre band that AM stations, tunable or crystal locked, should be excluded from the first 300 kHz of the band. The fact that AM requires a bit more spectrum than SSB should not preclude AM operation anywhere in a band 2 MHz wide. If Eric is worried about bandwidth why advocate impressing 25 watts of audio on 35 watts of carrier with the resultant splatter. Some SSB signals I have heard on 6 metres occupied a 6 metre wide bandwidth than a well modulated AM rig. Perhaps some operators without the ability or interest to homebrew a rig, even lack the ability to operate commercial equipment! To infer that the first 300 kHz of the 6 metre band is the preserve of SSB tunable operations smacks of self indulgence that is hardly compatible with the ethics of amateur operations in the VHF/UHF spectrum as I understand them — those of tolerance and encouragement.

A well known fact is that a certain percentage of amateurs are well heeled and can afford commercial SSB equipment. Eric may well be one within this group but I sincerely hope his indulgent sentiments for that group are not representative of that group. A great percentage of the amateur fraternity is comprised of the lower income group whose capacity for investment in equipment is limited to homebrew, ex-commercial or disposals type equipment very little of which is SSB. I find intolerable the inference that this group should not pursue their hobby with the equipment available to them in the spectrum not specifically designated for other services.

As DX is, generally, first worked within the first 300 kHz of 6 metres, as the MUF slowly arises, to suggest that only SSB stations should be first (as they invariably are anyhow) to work it would be to deny a section of our fraternity the very experience to which they aspire. I remind Eric that AM stations which perennially utilise the 6 metre band help justify our frequency allocation. Many SSB stations only work the frequency during the DX season!

I consider we should actively encourage all modes of operation anywhere in the tunable sections of 6 metres and can do without the parochial attitudes that frequently prevail.

P. Pendlebury, VK3ZAA

The Editor,  
Amateur Radio

Dear Sir,

My thanks to you for giving me an opportunity of replying to the above letter. My first reaction after rushing to look at what I had actually written and having a sigh of relief, was to ignore the letter if only because of inaccuracies and misinterpretations, but after a couple of days decided the "best interests of VHF — An expanding world" would be served by a reply.

I would suggest readers at this stage get out December 1974 "Amateur Radio" and look at what I did write on page 19, the VHF page, under the sub-heading "The DX is coming". Having done this, now read the letter from VK3ZAA again.

How anybody can possibly dream up the implication that I advocate AM stations should operate above 52.3 MHz is beyond me. There is no mention

of AM, not even by implication, at all until halfway down the paragraph when I say: "If you are running AM, please see your signal is well modulated . . ."

I suggested operating above 52.3 MHz for crystal locked transmissions simply because a station up there should be in the clear "when the band is wide open" and being in that region such a station would be less likely to find out too many enemies and be better able to be worked by others. Good grief! What should I say? The suggestion I made for those type of conditions is perfectly sound — if VK3ZAA wants to operate 10 kHz inside the band or elsewhere, crystal locked AM or SSB that's ok by me — but any inability to move up or down a few kHz to get into the clear under crowded conditions will certainly preclude many contacts.

Mr. Pendlebury comments at the start of his second paragraph that he doesn't believe it to be the opinion of the bulk of SSB operators that AM stations should be excluded from the first 300 kHz of the band. Of course it wasn't. Who said it was? I did not. How anyone can read that out of what I wrote is beyond me. How do you reply to such wild statements? If he can read that out of my writings what hope have I of convincing him of anything.

I note Mr. Pendlebury received his call sign in late 1972. Perhaps he is young, and rather inexperienced. If so, time will help this situation. If he is of mature years then he would be well advised to study more carefully written words before rushing into print. When he has experienced one of those days "with the band wide open" as they were some years ago, but not so much of recent time, he will surely better understand the reasoning behind my suggestion.

To accuse me of parochial attitudes and other various inferences is quite laughable. I guess there are many who have read my notes in various publications over the years who would back me completely when I state I have always believed I have adopted the most tolerant and understanding attitude towards all on the various bands — i.e. steering a middle course, and with as little bias as possible. I cannot remember when the Editor last blue-pencilled any of my notes!

Yes, Mr. Pendlebury, I do have a few items of commercial equipment, but I have a lot of homebrew too. I guess there would not be a lot of amateurs around in VK who over the years have constructed more equipment than I, ranging from AM, SSB, SSB and FM for both HF and VHF. Various converters, 6 and 2 metre transverters, 432 MHz transverter, power amps, linear amps, portable and mobile equipment, SWR meters, noise bridges, antennas tuners, antennas, test equipment, power supplies, and so I could go on. Perhaps you will grant me the privilege to own a few pieces of commercial equipment now. My operational interests are surely diversified when you know that I operate 160 to 10 metres SSB, 6 and 2 metres AM, SSB, FM and CW. 432 MHz AM, SSB and CW, and before long on 576 MHz too. Apparently in your words this makes me self-indulgent, lacking in tolerance and encouragement. At least I do my share to keep the bands occupied by operating in all segments and using all modes. Are you playing your part to keep the bands active?

I conclude with a relevant thought from the writings of Bertrand Russell . . . "The degree of one's emotion varies inversely with one's knowledge of the facts — the less you know the hotter you get".

73, Eric Jamieson, VK5LP

## solar flux and sunspots

Frank Hine VK2QL

30 Abbotsford Road, Homebush, 2140

Arrangements have been made by Frank VK2QL with the Ionospheric Prediction Service, for the daily flux number for the preceding week to be included in the weekly broadcast on VK2WL.

The word of warning is that the sunspot number, for the avid DXer, this flux number can be used as a guide to propagation conditions that have taken place, and one can form an opinion of what may be expected in the future.

For those who have the means of listening to WVV, this flux number is given every day at 15 minutes past the hour.

An indication of how this flux number could be used was the weekend of the CW section of the VK/ZL contest when excellent conditions prevailed until the Magnetic disturbance round 1200Z on the Sunday. The flux number in this instance reached 144, and then plummetted to round the 70 mark.

| Year | COMPLETE SUMMARY OF SMOOTHED MONTHLY MEAN VALUES |       |       |       |       | VALUES OF SUNSPOT NUMBERS AT ZURICH |       |       |       |       |       |       |
|------|--|-------|-------|-------|-------|-------------------------------------|-------|-------|-------|-------|-------|-------|
|      | Jan  | Feb   | Mar   | Apr   | May   | Jun                                 | July  | Aug   | Sep   | Oct   | Nov   | Dec   |
| 1954 | 6.4  | 5.6   | 4.2   | 3.4   | 3.7   | 4.2                                 | 5.4   | 7.2   | 7.8   | 7.9   | 9.4   | 12.0  |
| 1955 | 14.2   | 16.4  | 19.5  | 23.4  | 28.8  | 35.1                                | 40.1  | 46.5  | 55.5  | 64.4  | 73    | 81.0  |
| 1956 | 88.8   | 98.4  | 109.2 | 118.8 | 127.4 | 136.9                               | 145.5 | 149.6 | 151.4 | 156.0 | 159.9 | 164.3 |
| 1957 | 170.2  | 172.2 | 174.3 | 181.0 | 185.5 | 187.8                               | 191.4 | 194.2 | 197.2 | 199.5 | 208.0 | 200.0 |
| 1958 | 199.0  | 201.0 | 201.2 | 196.8 | 191.4 | 186.8                               | 184.7 | 184.9 | 183.8 | 182.2 | 180.8 | 180.5 |
| 1959 | 178.6  | 176.8 | 173.5 | 168.4 | 164.4 | 161.4                               | 155.8 | 151.2 | 146.2 | 141.0 | 137.2 | 132.6 |
| 1960 | 129.0  | 125.0 | 121.6 | 119.6 | 117.0 | 114.0                               | 108.6 | 102.4 | 97.8  | 92.8  | 87.4  | 83.6  |
| 1961 | 80.2   | 74.8  | 68.8  | 64.3  | 60.0  | 55.8                                | 53.1  | 52.4  | 52.3  | 51.8  | 50.9  | 48.7  |
| 1962 | 45.2   | 41.8  | 39.8  | 39.4  | 39.2  | 38.3                                | 36.8  | 35.0  | 32.7  | 30.8  | 30.0  | 29.8  |
| 1963 | 29.4   | 29.8  | 29.8  | 29.0  | 28.8  | 28.2                                | 27.7  | 27.2  | 26.9  | 26.0  | 23.8  | 21.3  |
| 1964 | 19.5   | 17.8  | 15.4  | 12.7  | 10.8  | 10.2                                | 10.4  | 10.4  | 10.0  | 9.7   | 10.3  | 11.2  |
| 1965 | 12.0   | 12.3  | 12.7  | 13.8  | 14.7  | 15.2                                | 15.4  | 15.5  | 17.2  | 19.4  | 21.8  | 20.6  |
| 1966 | 27.0   | 30.6  | 33.6  | 36.4  | 39.5  | 43.3                                | 48.8  | 56.4  | 62.7  | 66.8  | 69.0  | 71.2  |
| 1967 | 73.1   | 78.4  | 79.4  | 81.5  | 84.2  | 87.8                                | 93.8  | 94.6  | 94.4  | 94.0  | 96.2  | 100.0 |
| 1968 | 102.2  | 102.7 | 104.8 | 107.4 | 107.8 | 107.0                               | 105.2 | 104.8 | 107.1 | 109.6 | 110.0 | 109.4 |
| 1969 | 108.6  | 107.6 | 105.3 | 103.0 | 103.2 | 102.6                               | 106.1 | 106.9 | 105.8 | 104.5 | 105.0 | 105.6 |
| 1970 | 106.2  | 106.7 | 106.8 | 106.6 | 106.1 | 105.1                               | 103.3 | 99.6  | 95.4  | 91.8  | 87.2  | 81.6  |
| 1971 | 77.8   | 75.2  | 71.6  | 68.0  | 65.0  | 63.9                                | 65.5  | 65.0  | 66.4  | 67.1  | 67.6  | 69.3  |
| 1972 | 76.8   | 71.2  | 72.4  | 73.4  | 72.9  | 70.4                                | 68.1  | 65.4  | 62.0  | 60.4  | 58.5  | 54.8  |
| 1973 | 50.4   | 45.9  | 43.6  | 42.2  | 40.3  | 38.6                                | 37.8  | 36.4  | 34.8  | 33.2  | 32.6  | 32.8  |
| 1974 | 34.2   | 36.2  | 35.8  | 35.7  |       |                                     |       |       |       |       |       |       |

The flux number could have been used as a guide for the CW section of the WVV contest when again the flux number rose, with a quiet sun, to almost 100 after slowly climbing from the mid 80s. During this time the 144 MHz band was wide open to all parts of the world.

At present there are 2 theories being advanced on the current cycle. One is that it will follow approximately the normal 11 year cycle, and on going back to the sunspot number records Hines has since 1954, it could be about the middle of next year. However, mathematicians have produced a strong case to indicate that the bottom 1 time will not be reached until the year 1977.

The I.P.S. have advised VK2QL that one sun spot of the new cycle has been sighted for a short period of a few hours only. When nearing the bottom of a cycle, it is possible to tell whether a sunspot belongs to the old or the new cycle, but it is too involved to cover in this report.

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## Commercial Kinks

with Ron Fisher VK3OM

3 Fairview Ave., Glebe Waverley, 3150

This month it's back to our old friend the FT200 for a few quick and easy hints.

First it's over to Lionel Swain VK3CS. "Ever since I have had my FT200, the associated FP200 power supply had had a terrible metallic 'GRRRR' every time it was switched on, due apparently to the momentary short circuit in the form of the discharged filter capacitors. In fact during that time, I have blown the 5 amp fuse in the power transformer primary twice due apparently to no other reason than that the switch closed at the instant of maximum current."

During the week I had a rush of brains and installed a CZII thermistor in the transformer primary circuit — and the saints be praised, there is now only a barely perceptible grunt when the power is switched on. There are many types of thermistors available, but the CZII seems to be optimum for most transceivers although the higher power types may need a CZ12".

Lionel's idea is certainly worth the time it would take. Many amateurs have had trouble with diodes taking in the FP200 and the thermistor would no doubt ease the strain on them too.

Receiver cross modulation is a problem that seems to affect some amateurs more than others. Over the years I have had no serious trouble with the FT200 in this regard but if you happen to live in an area where broadcast signals are strong on 40 metres, here are a few simple modifications.

The harmonic producing diode (D301) is in the output of the crystal calibrator circuit is the number one suspect as it is connected to the receiver input at all times.

Fortunately, there is a spare set of switching contacts on the receive/operate/calibrate control, and this can be utilised in two different ways.

The first and easiest way is to route the output line of the calibrator through the switch. It is necessary to use a small diameter coaxial cable for this and in order that the impedance of the cable does not drop across the input of receiver, insert a 10 pF ceramic capacitor at the junction of the cable and the receiver input. The second method is a little more sophisticated. It involves applying a bias to the diode to effectively cut it out of circuit. Four new components are needed plus a small amount of re-wiring. Needed are two 47K ohm resistors and two 4700 pF ceramic capacitors. First locate the 9 volt connection on the Rec/Op/Cal and bridge to the spare section so that it connects to the moving arm in the operate position.

From the junction of C306 and D301 connect a 47K resistor to ground. Connect one of the .0047 mF between D301 and C301. Now connect a 47K resistor from the junction of the 4700 pF capacitor and the diode to the moving arm of the Rec/Op/Cal switch and bypass this end of the 47K resistor to ground with another 4700 pF capacitor. This completes the modification.

Many of the older SSB transceivers lacked a means of varying the drive under tune-up conditions. Next month we will discuss means of incorporating a drive control in Swan and similar rigs.

## PROJECT AUSTRALIS

with David Hull, VK3ZDH

### FUTURE

In the middle of March the author will be attending an AMSAT meeting in Washington which will explore the roles of the National groups in future satellites. Up for consideration by the meeting will be a new Project Australis command system together with an integrated RTTY Telemetry/Codestore system. If present plans work out these sub-systems will be part of a future joint Australis/AMSAT CANADA satellite project designed to provide a continuation of the low orbit (a la Oscar 6 and 7) programme into the late 1970s. Members are invited to write to Project Australis with suggestions for future satellite projects. Any mail should reach me before my departure on March 13th.

**PAST**

Some difficulties were experienced in late January and early February with Oscar 6 commands affecting Oscar 7. At this time the satellites were virtually in the same spot in the sky and despite precautions some of the dozens of commands a day fired at Oscar 6 caused unscheduled mode changing in Oscar 7. We apologise for any inconvenience caused but these problems were really out of our control.

**OSCAR 6 REF ORBITS**      **OSCAR 7 REF ORBITS**

| MARCH |       | MARCH  |      |       |      |        |      |   |       |        |      |   |      |      |      |   |       |        |      |   |      |        |      |   |       |       |      |   |      |      |      |   |       |        |      |   |      |       |      |   |       |       |      |   |      |        |      |   |       |        |      |   |      |       |      |   |       |      |      |   |      |       |      |   |       |        |      |   |      |       |      |    |       |      |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |      |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |      |      |    |      |        |      |
|-------|-------|--------|------|-------|------|--------|------|---|-------|--------|------|---|------|------|------|---|-------|--------|------|---|------|--------|------|---|-------|-------|------|---|------|------|------|---|-------|--------|------|---|------|-------|------|---|-------|-------|------|---|------|--------|------|---|-------|--------|------|---|------|-------|------|---|-------|------|------|---|------|-------|------|---|-------|--------|------|---|------|-------|------|----|-------|------|------|----|------|--------|------|----|-------|-------|------|----|------|-------|------|----|-------|--------|------|----|------|--------|------|----|-------|-------|------|----|------|-------|------|----|-------|--------|------|----|------|--------|------|----|-------|-------|------|----|------|-------|------|----|-------|--------|------|----|------|--------|------|----|-------|-------|------|----|------|-------|------|----|-------|--------|------|----|------|--------|------|----|-------|-------|------|----|------|-------|------|----|-------|--------|------|----|------|--------|------|----|-------|-------|------|----|------|------|------|----|-------|--------|------|----|------|-------|------|----|-------|-------|------|----|------|--------|------|----|-------|--------|------|----|------|--------|------|----|-------|-------|------|----|------|--------|------|----|-------|--------|------|----|------|-------|------|----|-------|-------|------|----|------|--------|------|----|-------|--------|------|----|------|-------|------|----|-------|-------|------|----|------|--------|------|----|-------|--------|------|----|------|-------|------|----|-------|------|------|----|------|--------|------|
| Day   | Orbit | Time   | Day  | Orbit | Time |        |      |   |       |        |      |   |      |      |      |   |       |        |      |   |      |        |      |   |       |       |      |   |      |      |      |   |       |        |      |   |      |       |      |   |       |       |      |   |      |        |      |   |       |        |      |   |      |       |      |   |       |      |      |   |      |       |      |   |       |        |      |   |      |       |      |    |       |      |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |      |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |      |      |    |      |        |      |
| Long  | Long  | Long   | Long | Long  | Long |        |      |   |       |        |      |   |      |      |      |   |       |        |      |   |      |        |      |   |       |       |      |   |      |      |      |   |       |        |      |   |      |       |      |   |       |       |      |   |      |        |      |   |       |        |      |   |      |       |      |   |       |      |      |   |      |       |      |   |       |        |      |   |      |       |      |    |       |      |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |       |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |      |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |        |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |       |      |    |      |        |      |    |       |        |      |    |      |       |      |    |       |      |      |    |      |        |      |
| 1     | 10849 | 125.24 | 68.7 | 1     | 1320 | 108.23 | 65.3 | 2 | 10851 | 125.18 | 68.7 | 2 | 1332 | 7.56 | 51.6 | 3 | 10874 | 120.10 | 67.4 | 3 | 1345 | 101.85 | 65.2 | 4 | 10886 | 20.04 | 52.4 | 4 | 1357 | 1.18 | 50.0 | 5 | 10899 | 114.96 | 66.2 | 5 | 1370 | 55.47 | 63.6 | 6 | 10911 | 14.89 | 51.1 | 6 | 1383 | 149.75 | 77.1 | 7 | 10924 | 109.82 | 64.9 | 7 | 1395 | 49.09 | 62.0 | 8 | 10936 | 9.75 | 49.8 | 8 | 1408 | 43.73 | 55.5 | 9 | 10949 | 104.61 | 63.6 | 9 | 1420 | 42.71 | 60.4 | 10 | 10961 | 4.61 | 48.6 | 10 | 1433 | 136.99 | 73.9 | 11 | 10974 | 59.54 | 62.3 | 11 | 1445 | 36.32 | 58.5 | 12 | 10987 | 154.47 | 76.0 | 12 | 1458 | 130.61 | 72.3 | 13 | 10999 | 54.40 | 61.0 | 13 | 1470 | 29.94 | 57.2 | 14 | 11012 | 149.73 | 74.7 | 14 | 1483 | 123.02 | 65.0 | 15 | 11024 | 49.26 | 59.7 | 15 | 1495 | 23.56 | 55.6 | 16 | 11037 | 144.19 | 73.4 | 16 | 1508 | 117.85 | 69.1 | 17 | 11049 | 44.12 | 58.4 | 17 | 1520 | 17.18 | 54.0 | 18 | 11062 | 139.05 | 72.2 | 18 | 1533 | 111.47 | 67.5 | 19 | 11074 | 38.98 | 57.1 | 19 | 1545 | 10.80 | 52.4 | 20 | 11087 | 133.91 | 70.9 | 20 | 1558 | 105.08 | 65.9 | 21 | 11099 | 33.84 | 55.9 | 21 | 1570 | 4.42 | 50.8 | 22 | 11112 | 128.77 | 69.6 | 22 | 1583 | 58.70 | 64.3 | 23 | 11124 | 28.70 | 54.6 | 23 | 1595 | 152.99 | 77.5 | 24 | 11137 | 132.63 | 68.4 | 24 | 1608 | 152.99 | 77.5 | 25 | 11149 | 21.53 | 53.3 | 25 | 1621 | 146.51 | 76.3 | 26 | 11162 | 119.89 | 67.0 | 26 | 1633 | 45.94 | 61.0 | 27 | 11174 | 16.42 | 52.0 | 27 | 1646 | 140.23 | 74.7 | 28 | 11187 | 113.35 | 65.7 | 28 | 1659 | 39.56 | 59.5 | 29 | 11199 | 13.38 | 50.7 | 29 | 1671 | 133.84 | 73.1 | 30 | 11212 | 108.21 | 64.4 | 30 | 1683 | 33.18 | 57.9 | 31 | 11224 | 8.14 | 49.4 | 31 | 1696 | 127.46 | 71.5 |

## Intruder Watch

with Alf Chandler VK3LC

1536 High Street, Glen Iris, 3146

A few of the successes that the Intruder Watch has achieved may be interesting to Members, but firstly a plea may be more appropriate. I have a rather comprehensive report on the Broadcasters in the 3.5 MHz band emanating from Indonesia, but need more information. On comparing notes with the U.S. I find that the frequencies given are compatible with frequencies on which Observers in the U.S. can hear A0 carriers, but cannot get enough strength for identification. I quote from a communication from K6KA — "We need help, particularly from Region 3 because it involves tropical and southern regions where we can NOT, repeat NOT, get anything at all here during the winter months.

Now we have been hearing only a very few signals on 14 MHz, and we are down to practically nothing, but we know from southern hemisphere reports that a certain signal is coming through we can watch for it and just as soon as we find it we can alert it to FCC and get some action. This has proved extremely useful".

For some successes —

1. A harmonic on 14240 from the BBC relay in Johore, Malaysia, was causing a lot of interference. The RSGB became interested and got the engineers to suppress the 2nd harmonic down to —79dB and we haven't heard it since.

2. We complained about a harmonic from a station on Okinawa on 14330 kHz and they fixed that.

3. On 14115 the Voice of America station in the Philippines was heard and reported by one of my U.S. and the engineers cured the spurious. An interesting phenomenon occurred here. It was found that two closely located transmitters were interacting to produce the spurious — the harmonic of one and the fundamental of another transmitter were mixing to propagate a signal on 14115 kHz.

4. A spurious signal (A3) on 14231.7 kHz took a long time to track down. We eventually found it to be in Thailand. By Amateur methods we ran it down to a broadcast station of the local television company at the airport at Bangkok. The company didn't want to replace the old transmitter because they hoped it would stand up for a little longer, but by persuasion through their engineers it was replaced and the spurious cured.

There are many more I could recount, but space does not permit. You will remember in previous issue about KJG in Yugoslavia, and TCX in Turkey. It is by co-operation between Observers, and between Amateur Societies that the best work has been done; in other words **BY AMATEUR METHODS**.

Reference the Majak (Russian) jammer on 7030-7040 kHz jamming the Peking broadcast on 7035 kHz the signal strength from that jammer has been measured in Los Angeles and is 2000 microvolts (that's two millivolts) that is an awful lot of signal, and no wonder it is so troublesome here in Australia.

## 20 Years Ago

with Ron Fisher VK3OM

MARCH 1955

Looked at our Wanning Heritage, The Editorial for March 1955 looked at our Wanning, which is our non-native of the amateur bands. One paragraph was significant: "To protect what's left it has been said that we cannot now expect to rely on the two world societies to represent Australia at the next International Conference — when ever that might be. We must have our own representative there". And indeed we did.

Only one main technical article appeared, however it was a case of quality rather than quantity. Eric Cornelius VK6EC, remembered of course for his super series on television a short time earlier, wrote on "Wobblulators — Sweep Generators".

The late Don Knock VK2NO supplied a few interesting "Hints and Kinks". Six metre men were having fun. The VHF column, "Fifty Megacycles and Above" reported DX contacts between VR2CG in Fiji and VK9HK in Perth. VK2ABZ listening only, heard VK2, 4, 5, 2L and VR2, while VK1ZM on Macquarie Island heard many New Zealand stations.

The Short Wave Listener Section reported on stations heard, activities of members plus a few technical ideas including the perennial "S" meter circuit.

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**Swan 350 T/R, AC PSU**, sparc PA tubes. **BC221** Freq. Meter with handbook and circuit for solid state. Phillips CRO 2 inch CRT. Variety PWR, transformers, valves, etc. Best offers. VK3AJR, QTHR.

**TV Equipment**. AWA TV off air receiver, \$40.00. Video monitors, various sizes, \$40.00. Studio Sync. generator RCA T92, \$45.00. Monochrome TV picture

generator with sync. generator, spare tubes, \$50.00. EMI 302 Wave Form Monitor, \$40.00. RCA Video Switcher, 3 x 8 inputs, \$50.00. Various other TV equipment. All items O.N.O. D. Stokes, VK2ZPM, QTHR. Ph. (02) 476 2304.

**2. Phillips Battery Eliminators** with valves, very early AWA radio, 9 valve Kriesler radio P.P. 2A3s are gassy. Also Type "S" power supply, in good order. J. E. Mackie, VK2ZDM, Hillston.

**Genojo Transmitter and PSU** 64/229 with matching speaker, mike, manual, 80-10 Mx SSB. PEP, CW 225 W, AM 120 W. As new condition, \$350.00. Miss E. Wooley, 156 Kilgour St., Geelong. Ph. (052) 21 2674.

Completed Wellington VMF Group handheld 2m FM Transceiver Kit with stats for channels R1 and 40 plus 7W amplifier stage and pre-amps. 75% Mosfet, 4 band trap vertical 10-40 m, \$30. Type 3 Mk 2 portable transceiver AM & CW, 14-1.8 MHz, \$50. VK3AHH, QTHR. Ph. (03) 288 2024.

**Yates FT101B**, Brand new, \$545. VK3YBA, 97 Victor Rd., St. Albans, 3167.

**Yates FT75 Transceiver**, DC75 power supply, VF50 C VFO, Hygain 18V portable antenna 80m-10m. And 30 ft. 60' rotator — all in new condition and complete, \$300.00. R. F. Lloyd, VK3KJ, QTHR. Ph. (03) 652 8377 but; (03) 45 4200 A.H.

**6m FM Model 88** set and handbook, \$5. Also Sale motors, order, VK3ZKS, QTHR. Ph. (03) 38 6793.

**Collins R381/VRB Receiver**, 52-32 MHz, good cond. including manual. See articles AR, \$500. J. G. Maciver, 27 Jeannette Ave., Springfield, Qld., 4127. Ph. (072) 80 4020.

**Yates FT200B Transmitter**, in excellent working order, 80 to 10m. Complete with matching phone and 10 new spare valves \$160.00. VK6HE, QTHR.

**Solid State Television Vidicon Camera**, complete with fast scan to slow scan sampling converter for SSTV operation. Home brew but very neat construction and small in size. Vidicon nearly new and complete with lens, \$100.00. VK5VG, QTHR. Ph. (08) 226 5152.

**Tower 25 R**, single section Hills, 10 in. triangle, 15.5. Hills 10 el. 2m Yagi 7.5T CDR rotator TR44 with indicator and 240/110V trans., \$40. VK2AQW, QTHR. Ph. (02) 449 3538.

**104 Copies QST**, 1965-1973, some complete years, good condition. Any reasonable offer accepted. Also RSGB "Radiocommunication" 1965-1972, 101 copies, some complete years, good condition, price as above. VK4MY, QTHR.

**Eddystone 88BA Receiver**, ham bands 1.6-30 MHz, 100 kHz calibrator with data sheet, price \$150.00. VK4MY, QTHR.

**FT DX 560**, immaculate condition, little used, professionally modified to better than FT DX101 specification, 160m, 10m, fan, CW filter, noise blanker, noise limiter, full metering of HT, screen current and volts, SWR, \$495. VF 461, external antenna in caron, \$110. Matching external speaker, \$25. **Magnum Six** RF speech processor, suitable FT DX 400, 401, 506, as new, little use, \$135. The lot \$740. VK3ARZ, 12 Explorers Court, Vermont South, 3133. Ph. (03) 232 9492.

**ART all coil boxes**, \$80. Many aerial tuning caps, OAK switches and ex aircraft gear. Phone 688-9054. VK2ZKV, 41 Torres St., Kurnell, 2231.

### WANTED

**SSB HF Bands Transceiver**, suitable for AC and DC operation. W. Marthaise, VK2ADZ, 28 Probert Ave., Griffith, N.S.W., 2680. Ph. (069) 62 3718 A.H.

**Kindly Amateur to Coach me** but busy prospect as my OTH or yours to pass AOCP in August 1975. Agree to pay coaching fee for good no nonsense knowledgeable approach. Offers to Stephen Phillips, 7 Macedon Court, Nunawading, Ph. (03) 878 8336 — S. G. Phillips.

**Service Manuals** for Pye Transistor, FHC Ranger model, PTC 8002 TWT and Vinten Vantage, MTR 16 B. J. Cleary, Linton, Bomaderry, N.S.W., 2553.

**Circuit Diagrams** for No. 19 wireless set wanted urgently. John Sparkes, 105 Daglith St., Wembley WA, 6014. Ph. (092) 81 6030.

**Heavy duty** commercial 12 volts DC Mobile Power Supply Unit to suit Swan 350, 800 volt at 500 m.s.e. etc. Price and specs to VK40V, 4 Topaz St., Mount Isa, Q. 4825. Ph. (077) 43 2808.

# Economical Mobile/Base Station FT-201



## FEATURES

- Built-in AC power supply (DC optional)
- 260 Watts peak SSB 180 Watts CW & 80 Watts AM
- Factory sealed, solid state VFO with 1 KHz readout
- Effective Noise Blanker, threshold adjustable, for elimination of noise spikes
- Built-in front panel adjustable VOX
- Automatic break-in CW operation with sidetone
- $\pm 5$  KHz receiver clarifier
- Built-in WWV/JJY reception
- Adjustable carrier level for tune-up and Novice operation
- Indicator lights for internal VFO and clarifier operation
- All mode operation - SSB, CW, & AM
- Fast or slow receiver AGC
- Built-in internal crystal control provision and dual VFO adaptor
- Built-in final cooling fan
- Complete line of compatible accessories for flexible station design

## TECHNICAL DATA

### GENERAL

**Frequency Range:** 3.5–4.0 MHz, 7.0–7.5 MHz, 14.0–14.5 MHz, 21.0–21.5 MHz, 28.0–30.0 MHz, WWV 15 MHz (receive only).

**Mode:** Selectable USB, LSB, CW or AM.

**Frequency Stability:** Within 100 Hz during any 30 minute period after warm-up. Not more than 100Hz with 10% line voltage variation.

**Calibration Accuracy:** 2 KHz maximum after 100 KHz calibration.

**Backlash:** Not more than 50 Hz.

**Antenna Impedance:** 50 to 75 Ohm unbalanced nominal.

**Circuitry:** 32 Transistors, 9 FET, 6 Integrated Circuits, 52 Diodes and 3 Tubes.

**Power Requirement:** 100/110/117/200/220/234 V AC, 50/60 Hz, 380 Watts maximum, or 13.5V DC nominal, 6.7 A for standby, 0.7 A for

receive (Heater OFF) and 24 A for transmit.

**Size:** 340(W) x 153(H) x 285(D) m/m.

**Weight:** 15 Kg.

### RECEIVER

**Sensitivity:** 0.3  $\mu$ V for 10 dB Noise plus Signal to Noise Ratio on 14 MHz.

**Selectivity:** 2.4 KHz nominal bandwidth at 6 dB down, 3.8 KHz at 60 dB down on SSB, CW and AM. 600 Hz nominal bandwidth at 6 dB down, 1.2 KHz at 60 dB down with optional CW filter. 600 Hz nominal bandwidth at 6 dB down, 12 KHz at 60 dB down with optional AM filter.

**Harmonic & Other Spurious Response:** Image Rejection better than 50 dB. Internal Spurious Signal below 1  $\mu$ V equivalent to antenna input.

**Automatic Gain Control:** AGC threshold nominal 6  $\mu$ V. Selectable AGC time constant, fast or slow. Fast attack time 3 milli-second and slow attack

time 5 milli-second. Fast release time 0.35 second and slow release time 2 seconds.

**Audio Noise Level:** Not less than 40 dB below 1 Watt.

**Audio Output:** 3 Watts to internal or external speaker at 4 Ohm impedance.

**Audio Distortion:** Less than 10% at 3 Watts output.

### TRANSMITTER

**Input Power:** 260 Watts PEP on SSB, 180 Watts on CW at 50% duty cycle and 80 Watts on AM. (Slightly lower on 10 meter.)

**Microphone:** 50 K Ohm dynamic type.

**Carrier Suppression:** -40 dB.

**Sideband Suppression:** -50 dB.

**Spurious Radiation:** -40 dB.

**Distortion Products:** -30 dB.

**Frequency Response:** 300 Hz to 2700 Hz  $\pm$  3 dB.

**Final Tube:** 6JS6C x 2.



**ELECTRONIC  
SERVICES**

60 Shannon St., Box Hill North, Vic. 3129.

Ph. 89-2213

QLD. MITCHELL RADIO CO. 59 Albion Road, Albion, 4010  
NSW. STEPHEN KUHL, P.O. Box 56, Mascot, 2020

Ph. 57 6830

Ph. Day 661 1650

A.H. 371 5445

S.A. FARMERS RADIO PTY. LTD. 257 Angas Street, Adelaide, 5000  
W.A. H. R. PRIDE, 26 Lockhart Street, Como, 6152

Ph. 23 1268

Ph. 60 4379

(continued from July, 1974)

3ZY—P. S. Collins, 5 Van-Wyk Court, Springvale, 3172  
3ZZG—I. R. Gillard, 6 Miami Court, Bendigo, 3550

#### QUEENSLAND

VK4AS—K. H. Smith, 17 Sefton Avenue, Clayfield, 4011  
4NM—A. B. Nyhuis, "Forests Lodge", Port Douglas Road, Port Douglas, 4871  
4OH—D. R. Ham, 20 Alfred St., Charleville, 4470  
4SI—J. E. Spencer, Station: Burnside Road, Nambour; Postal: PS 1712, Nambour, 4560

#### SOUTH AUSTRALIA

VK5GZ—E. B. Gliddon, 31 Hillside Ave., Highbury, 5006  
5VU—A. J. Pawliczyk, F/23 Cartilage 515 MN North Road, Elizabeth, 5112  
5ZLB—L. J. Bles, 18 Norfolk Ave., Fulham Gardens, 5024  
5ZMW—B. M. Wallis, Lot 8, Quintrell Road, Virginia, 5120  
5ZRT—R. Battilana, 7 Mitcham Avenue, Lower Mitcham, 5062  
5ZZA—B. J. Lenny, 5 Wells Crescent, Valley View, 5093  
5BO—A. E. Williams, 33 May Terrace, Ottway, 5013  
5FV—C. Clemente, 21 Thompson Ave., Salisbury Downs, 5108  
5SF—M. H. Wood, 22 Bloomfield Cres., Elizabeth Downs, 5113  
5TW—W. E. Giles Clark, 355 Shepherds Hill Road, Blackwood, 5054  
5ZB—E. B. Stephenson, 1 Emily Ave., Clapham, 5000  
5ZOF—G. C. Adams, 4 Willowie St., Eden Hills, 5000  
5ZPC—P. Clemente, 21 Thompson Ave., Salisbury Downs, 5108

#### WESTERN AUSTRALIA

VK5XK—B. A. Wheeler, Station: 1 Yalberoo St., Newman; Postal: P.O. Box 145, Newman, 6753  
6DR—J. G. Harmsen, 3 Silverton Cte., Willetton, 6155  
6NY—P. M. Bertram, Station: Portable; Postal: 26 Glosster St., Subiaco, 6008  
6EM—S. E. Harrison, 18 Linton Place, Morley, 6002  
6PR/T—T. R. Fisher, 16 Lindsay Way, Padbury, 6005  
6OR—D. M. Maley, 11 Nairning Way, Nollamara, 6061  
6NL—V. H. Harris, "Birkenhead", Lot 655 Scottsdale Rd., Denmark, 6333  
6ZBC—G. J. O. Coles, Station: 90 Parramatta Road, Doubleview; Postal: P.O. Box 164, Doubleview, 6018  
6ZKO/T—P. R. Casper, Lot 61, Burinjuck Road, Gooseberry Hill, 6076

#### TASMANIA

NII  
  
**NORTHERN TERRITORY**  
VK8AC—A. J. Kelso, Captain Cook Hostel, Nhulunbuy; Postal: P.O. Box 55, Nhulunbuy, 5797  
8AJ—A. C. Johnson, 2922 Knowles St., Jingili, 5792  
8ZRD—Dr. Gordon, 3312 Thornton Crescent, Casuarina, 5792

#### CANCELLED STATIONS

**AUSTRALIAN CAPITAL TERRITORY**  
VK1IGI—I. Grant, non-payment.  
1SR—S. N. Graves, not required  
1ZPB—P. S. Bell, not required  
  
**NEW SOUTH WALES**  
VK2BRC—Taree O.K., Youth Radio Club, no longer required  
2LM—L. M. Wilson, non-payment  
2YAI—L. G. Baker, no longer required  
2ZXB—F. R. O'Hare, no longer required  
2ZWF—J. Foster, non-payment  
2AT/T—L. Altman, deceased  
2IU—M. J. McDonald, non-payment  
2ZGT—R. C. McGregor, not required

2ZY/T—H. J. Smith, not required  
2ZRX—W. S. Baynes, non-payment  
2PBR—H. Pearson, non-payment  
2BZE—M. S. Hort, not required  
2UG—R. W. Eagling, not required  
2ZA—W. Senior, not required  
2YBE—N. C. Welested, not required  
2ZCW—J. B. Webster, not required  
2VT—O. Ulm, non-payment  
2YD—T. D. Witham, non-navigation  
2ZWD—J. H. Howe, non-payment

#### VICTORIA

VK3DT—M. J. Rieper, transferred to New South Wales

3XU—J. R. Oxley, not renewed  
3AZK—W. D. Harwood, now VK3SR  
3AMY—M. J. Mains, not renewed  
3BGO—R. N. Swift, not renewed  
3YFJ—P. G. Niehoff, not renewed  
3YFW—G. M. McDermott, transferred to Queensland  
3YHJ—M. J. Ross, now VK3LT  
3ZNW—L. R. Stewart, now VK3ASW  
3ZRO—R. L. Duckworth, now VK3AC  
3ZQW—J. L. Gras, transferred to New South Wales  
3YGS—Q. J. Clare, transferred to Queensland

#### QUEENSLAND

VK4AG—A. J. Greenham, not renewed  
4DS—De La Salle College Radio Club, disbanded  
4EJ—E. J. Chandler, deceased  
4OY—J. C. A. Young, deceased  
4RS—R. E. Stacey, deceased  
4RT—H. R. Coat, transferred to South Australia  
4YU—G. C. F. Dillon, transferred to Victoria  
SOUTH AUSTRALIA

VK5DM—J. L. Watts, not renewed

#### WESTERN AUSTRALIA

VK6RV/R—G. B. Vaughan, left country, now in United Kingdom  
6WK—T. W. Ruse, not renewed  
6ZAG—E. Watts, non-payment, non-renewal fee

#### TASMANIA

NII  
  
**NORTHERN TERRITORY**

NII  
  
**AUGUST, 1974**  
**NEW STATIONS**

#### AUSTRALIAN CAPITAL TERRITORY

VK1ZSH—S. H. Neilsen, 6/86 Anzac Park, Campbell, 2601

#### NEW SOUTH WALES

VK2DT—M. J. Rieper, 5 Cobblestone St., Mosman, 2088  
2TZ—A. Roberts, 55 Windsor Rd., Kellyville, 2153  
2WO—Wollongong University College Amateur Radio Club, Northfields Lane, Wollongong, 2500  
2YD—T. D. Whitam, 195 Marca Ave., Panania, 2212  
2AOB—J. Morgan, 3/63 Wentworth St., Randwick, 2031  
2AO—South Broken Hill Boys Club, Central Street, Broken Hill, 2880  
2AGK—H. J. Hatherill, 12/2 Bando Rd., Cronulla, 2230  
2BCU—L. N. F. Smith, 8 Dore Creek Road, Coorabong, 2265  
2BDE—E. R. Cooper, c/- G. S. Bracewell, 36 Corang Road, Westleigh, 2120  
2BFM—M. Flynn, 10 Redman Pde., Belmore, 2192  
2ZKZ—W. Lean, 3 Eighth St., Balaroo, 2284  
2CAB—G. Wright, P.O. Box 24, Coogee, 2034  
2YDD—J. Grant, 3 Kapala Ave., Bradbury, 2560  
2YD—P. A. Dalton, 68 Unwin St., Bexley, 2207  
2ZNW/T—W. A. Watkins, 154 Moulder Street, Orange, 2900

#### VICTORIA

VK3CC—M. C. Cohen, 21 Bowen St., Chadstone, 3148  
3YJ—I. Austin, 14 Ruskin St., Orbost, 3888  
3KA—W. J. Kirkhope, 271 High Street, Lower Templestowe, 3107  
3OV—P. O'Shannessy, 19 Kilpatrick Ave., Sheeparton, 3630

3PC—C. R. Fine, 1 Heyington Place, Toorak, 3142  
3TI—R. S. Pearce, 115 Plenty Rd., Bundoora, 3083

3KL—J. A. Hudson, 33 Burke Rd. North, East Ivanhoe, 3015  
3AGA—J. T. Franklin, 7 Bradford Ave., Kew, 3101  
3AHS—Harbour Trust Amateur Radio Club, P. Weaver, Lot 84, Lockwood Rd., South Belgrave, 3160

3AKG—D. C. T. Arnold, 8 Russell St., Camberwell, 3124  
3AGB—W. Babb, 76 David Ave., East Keilor, 3033

3BCO—R. W. Bell, 38 Spray St., Rosebud, 3939  
3BEW—J. M. Kernet St., Spotswood, 3015

3BHK—S. K. Bushell, 74 King Parade, Knoxfield, 3180  
3YEC—P. J. McDonald, 24 Higgins Ave., Sunbury, 3429

3YEL—D. J. Stuart, 32 Burundi Rd., South Caulfield, 3162  
3ZQY—H. J. De-Deugd, 422 Upper Heidelberg Road, Heidelberg, 3084

3ZVT—M. J. Atkinson, 6 Mark Court, Dandenong North, 3175

#### QUEENSLAND

VK4AAB—S. N. Graves, 25 Churchill St., Maryborough, 4650

4AAS—E. J. Smith, 20 Tingwood St., Kirwan, Townsville, 4814

4AE—G. K. Williamson, 210 Grafton St., Cairns, 4870

4CL—M. L. Barrett, Flat 4/8 Ridley St., Auchenflower, 4066

4UO—E. W. B. Wollen, Sunshine Motel Caravan Site, Elizabeth Ave., Clontarf, 4019

4ZEG—A. E. Burge, 4 Jacaranda Drive, Albany Creek, 4039

4ZJK—H. J. Bartlett, 5 Donnoch Terrace, West End, 4101

4ZYA—L. G. Baker, Station: 34 Millchester Rd., Charters Towers, 4820; Postal: c/- 10 Sqn. Radio R.A.A.F. Base, Townsville, 4810

4ZZZ—W. G. McDermott, 10 Pinelands Street, Lawnton, 4501

4ZJZ—G. J. Clare, 42 Scherger St., Moorooka, 4105

#### SOUTH AUSTRALIA

VK5IG—R. J. W. Hester, 13 Lambett St., Ceduna, 5690

5QO—J. Klimes, 60 Marrett Drive, Ingle Farm, 5098

5RV—H. R. Coat, 6 Waruna Ave., Seaview Downs, 5049

5RZ—D. L. Nestrom, U1/29A Winchester Street, St. Peters, 5068

5ZBL—P. C. Bachli, 50 Birnie Avenue, Kensington Park, 5068

5ZSL—L. H. Smith, 66 Ways Road, Manningham, 5086

#### WESTERN AUSTRALIA

NII  
  
**TASMANIA**

VK7ZY—H. J. L. Smith, Station: 425 Invermay Road, Mowbray Heights; Postal: P.O. Box 8, Mowbray Heights, 7250

#### NORTHERN TERRITORY

NII  
  
**COCOS ISLAND**

VK9YT—Wayne Warden Jnr., not known "exactly" on Island (Route 12, 704 Meadowbrook, Bloomington, Indiana, U.S.A. 47401)

#### CHANGE OF ADDRESS

**AUSTRALIAN CAPITAL TERRITORY**

NII  
  
**NEW SOUTH WALES**

VK2KT—L. P. Gerrity, "Ebbtide" Marine Dr., Benetas Head, Forster, 2428

2NL—H. J. Freeman, 318 Maroubra Rd., Maroubra, 2035

2ZK—W. G. Kirchner, Lot 3, Paterson Rd., Woodville, 2321

2ADR—D. W. Reed, 100/1 Bridge St., Muswellbrook, 2333



**INTERNATIONAL**  
PTY. LIMITED

**HAM HEADQUARTERS!**

## HF TRANSCEIVERS (we have used gear too)

YAESU FT101B 160/10m AC-DC transceiver. Avl EX-STOCK at \$585  
- YAESU FV-101B VFO for FT101B - \$102  
YAESU FT758 80w pep transceiver - \$245  
- AC power supply \$65, DC power supply \$75  
TRIO TS-520 all band transceiver - \$550  
- external VFO \$80 (6m and 2m transverters arriving soon!)

## 6 METRES

ICOM IC-60 fm 10 watt mobile transceiver incl 2 channels \$235  
ICOM IC-501 SSB transceiver incl AC pwr supply \$445

## 2 METRES

ICOM IC-22A fm 10w mobile transceiver incl 3 chs \$210  
ICOM IC-21A fm 10w base/mobile transceiver incl 3 chs \$298  
SEIWA SV-230 25w fm mobile for 2m incl 3 chs \$210  
MULTI-7 10w 2m fm mobile transceiver incl 3 channels \$210  
KEN KP-202 hand-held 2m fm 2 watts incl 4 chs (40/50/1/4) \$150  
- Nicad chargers and nicads \$32  
- stubby helical whip \$8.90  
YAESU FT220 SSB/FM/CW solid state transceiver \$480

**70 cm** (incl 1 channel, 435.00MHz)



SEIWA SLI-710 fm mobile transceiver, complete \$298  
ICOM IC-30 10w fm mobile transceiver \$370

### NOT HERE?

The gear you want may not appear on this page. VICOM can procure ANY amateur gear avl overseas (usually within 10 days) via our TELEX service. Try us.

## 2 METRE DIGITAL VFO

ICOM DV-21 solid state can be interfaced with other gear \$298

## RECEIVERS

TRIO QR-666 all band mode communications receiver 170 KHz to 30MHz \$275 (kit \$230)

## POWER SUPPLIES

ICOM IC-3PA for ICOM mobile gear \$78  
SPECIAL 12v 3 amp regulated supply from 240v \$28

**VICOM 90-DAY WARRANTY ON ALL NEW PRODUCTS**



## RAIC ANTENNA

BY VICOM

|                                     | Model    | Imp | Freq        | VSWR  | PRICE \$ |
|-------------------------------------|----------|-----|-------------|-------|----------|
| <b>BALUNS</b>                       | BL-50A   | 52  | 1.8 - 38MHz | 1.3:1 | 14.90    |
|                                     | BL-70A   | 75  | 1.8 - 38MHz | 1.3:1 | 14.90    |
| <b>COAX SWITCHES</b><br>(2 & 6 pos) | CS-2A    | 52  | to 300MHz   | 1.3:1 | 21.00    |
|                                     | CX-6A(A) | 52  | to 500MHz   | 1.3:1 | 54.00    |
|                                     | CX-6A(B) | 75  | to 500 MHz  | 1.3:1 | 54.00    |
| <b>TRAP Dipoles</b>                 | III-N    | 52  | 7 to 28MHz  | 1.2:1 | 31.00    |
|                                     | AL48DXN  | 53  | 3.5 & 7MHz  | 1.2:1 | 31.00    |
|                                     | AL24DXN  | 52  | 7 & 14MHz   | 1.2:1 | 24.00    |
|                                     | A-4VPN   | 52  | 7MHz        | 1.2:1 | 24.00    |
|                                     | A-8VPN   | 52  | 3.5MHz      | 1.2:1 | 26.50    |
| <b>LISTENER</b>                     | L1       | 75  | 3 to 30MHz  | -     | 14.90    |
| <b>BALANCED FEEDER</b>              | BTF-1    | 600 | -           | -     | 12.00    |

## TEST GEAR

TRIO VT108 FET VOM 8 ranges 0.5 to 1.5kv, 11 meg input, ohms 0.1 to 1000 meg, memory feature \$85  
TRIO AG202A AUDIO GENERATOR covers 20Hz to 200 KHz 10v rms output, sine and sq wave, ext sync \$94  
TRIO 75mm scope 20mv/cm sens, dc to 1.5 MHz \$170  
TRIO SG402 RF GENERATOR covers 100KHz to 30MHz \$76  
D-60 FREQUENCY COUNTER including 2 metre prescaler \$360

## ANT. ACCESSORIES

ME-11B SWR/PWR METER 3-150MHz \$22  
ME-1A UHF POWER METER \$69  
AS-GM GUTTER CLAMPS 2m \$7.50  
SCALAR MOBILE WHIPS:  
M22 2m fibreglass \$7.50 (1/4w)  
M60 6m fibreglass \$10.70 (1/4w)  
M21 2 m e-steel \$6.90 (1/4w)  
COAX 58U 45c per m  
RB 2metre mast amp (144-146 or 146-148) \$32

## SPECIAL

VICOM 24 or 12 hr digital (electronic) clock \$39.90

FOR OUR POLICY CONDITIONS SEE PAGE 10

**VICOM INTERNATIONAL PTY LIMITED (03) 82-5398**

**139 AUBURN RD. AUBURN, VIC 3123. Manager: Peter Williams**  
**Geelong - Phil Fitzherbert (052) 43-6033**



MARCH 1975  
VOL. 43, No. 3

## YAESU AMATEUR EQUIPMENT



### HERE'S WHERE IT IS MADE

Photo shows part of the modern Fukushima plant of Yaesu Co in Japan. The same high quality service is followed through at the Australian Agency, BAIL ELECTRONIC SERVICES, where full facilities exist to give you the Warranty, Service and spare parts availability that is your entitlement when you purchase new high quality equipment.

Here at B.E.S. we pre-sales check all sets to help ensure that you will have trouble free operation with your purchase. And, in the event that a problem does develop, then you can be assured that your purchase gives you an equity in our service facilities and spare parts.

Write or call for information and advice about your amateur radio requirements for all bands, all modes.

THE AUSTRALIAN YAESU AGENT:—



**ELECTRONIC  
SERVICES**

Qld. MITCHELL RADIO CO. 59 Albion Road, Albion, 4010  
N.S.W. STEPHEN KUHL, P.O. Box 56, Mansfield, 2020

S.A. FARMERS RADIO PTY. LTD. 257 Angas Street, Adelaide, 5000  
W.A. H. R. PRIDE, 26 Lockhart Street, Como, 6152.

Ph. 57 6830  
Ph. Day 667 1650  
A.H. 371 5445

Ph. 23 1266  
Ph. 60 4379

# <sup>7-H</sup> W.A. BULLETIN

WEST AUSTRALIAN SUPPLEMENT TO  
"AMATEUR RADIO" MARCH 1975.

|                         |                 |        |              |
|-------------------------|-----------------|--------|--------------|
| Patron                  | Bgdr. G.P. Hunt | C.B.E. | VK6QJ        |
| President               | A. Austin       | VK6MA  | 681808       |
| Secretary               | M. Penfold      | VK6NE  | 463232       |
| Treasurer               | C. Waterman     | VK6NK  | 684717       |
| Asst. Treasurer         | P. Dew          | VK6EU  | 684902       |
| Broadcast Officer       | A. Austin       | VK6MA  | 681808       |
| Equipment Officer       | G. Ogg          | VK6KY  | 494433       |
| Minute Secretary        | R. Greenaway    | VK6DA  | 242909       |
| Membership Secretary    | B. Pemberton    | VK6VW  | 871269       |
| W.I.C.E.N. Co-ordinator | P. Beacher      | VK6DD  | 763346       |
| Bulletin Co-editors     | L. Ball         | VK6AN  | 281100Ext240 |
|                         | R. Greenaway    | VK6DA  | 242909       |

All material for inclusion in the "Bulletin" to reach the editors by phone or to :-22 Salisbury St., Leederville, before the 10th. of each month.

CORRESPONDENCE. All correspondence should be addressed to :-  
Hon. Secretary, W.I.A. (W.A. Division).  
P.O. Box N1002,  
G.P.O. PERTH. 6001.

DIVISIONAL NEWS BROADCAST. VK6WI  
Sundays, 0930 W.A.S.T.  
80 metres SSB (Approx 3600 KHz )  
40 metres SSB (Approx 7080 KHz )  
20 metres SSB (Approx 14100 KHz )  
6 metres FM (52.656 MHz )  
2 metres FM ( Channel 1 )

GENERAL MEETINGS. Held on the THIRD TUESDAY of each month at 7.45 p.m. at Science House, 10 Hooper St. West Perth.

COUNCIL MEETINGS. Held on the LAST FRIDAY of each month at 7.30 p.m. at the above address -- observers welcome.  
SLOW MORSE TRANSMISSIONS.

Practice sessions are held Monday to Friday inclusive, on 3550 KHz ± QRM at 8.30 p.m. W.A.S.T.

SUBSCRIPTIONS are OVERDUE - have you paid yours ?

W.I.A. Darwin Appeal all donations to the Divisional Treasurer.

INTRUDERS. Make it a habit to log and report at least one Intruder every time you go on the air - please !

This concerns all SWL's.

An attempt is being made to have a column of this Bulletin set aside for all SWL's and this can only be achieved by you chaps getting behind the 8 Ball and contributing items of interest, comments and questions

It is felt that you have much to contribute and every effort will be made to encourage you to participate.

Do you know of any SWL who is not a member of the W.I.A.?? If so, let us know and we will endeavour to encourage him (or her) to join. Remember they will be joining the ranks of some of the finest chaps anyone could wish to meet. They are always ready to offer advice and assistance where ever possible. You can show your appreciation by making this column a worthwhile section of the Bulletin. Further details can be obtained by writing to the Editor clearly marking your envelope "SWL CORNER" and any contribution by way of notes, items of interest and etc. can be forwarded in the same manner. So come on chaps - lets have it.

A "pen name" may be used but all correspondence must have name and address attached.

....  
A few weeks ago I was visiting the shack of a SWL and was most concerned to see a small child of about 3 years of age climbing under the work bench where a fully exposed Power Supply was switched on. This could have ended in tragedy. PLEASE use extreme caution with your equipment. It is a simple matter to install safety shields etc. and to put that gear back in its nice safe cabinet after you have been working on it.

.....  
Do you know of any "pirates" operating????? Remember these clots are only making things bad for us all. They have a total disregard for rules of any sort.

REPORT THEM IMMEDIATELY

.....

Wednesday, 15-1-75 on 2 metres.

Who was the operator transmitting with his car radio blaring out background music. Could he be committing a breach of Regulations?

.....  
The thanks of all SWL's go to the Operators responsible for putting over the News Broadcasts on Sunday mornings. Many of us cannot phone in or be on the "call back" but we assure you that the service is greatly appreciated by us all.

.....  
I would like to hear from all SWL'S giving me your name, address, age, equipment and any particular interests. This would be of great help and may enable us to be of assistance to some other service or part of the W.I.A.

73.

.....  
SCHOOL RADIO CLUB NOTES

HAMILTON SENIOR HIGH SCHOOL RADIO CLUB

Hamilton Snr. High School have acquired an FM 60 2 metre Base Station and are keen to become active as VK6GH. Unfortunately the transciever has to be put off to 2 metres and the club leaders VK6NH and VK6KS cannot obtain the information. Would any Amateur who is willing and has any details of this unit or know how please contact VK6NH - QTH or 992536. The help would be gratefully received.

The group is also keen to obtain a 2 metre mobile transciever at a

reasonable cost. If you have equipment for sale which does not need modification or repairs would you please contact VK6NH.

## BUNNIBY CATHEDRAL, GRAMMAR SCHOOL.

The above mentioned school opened in February 1972 and immediately offered audio-1 Option to First and Second Year students.

The following year, Radio 1 and Radio 2 were offered and about 30 boys and 4 girls took the course. Most were successful and many received certificates at the various levels after passing the Y.R.S. exams.

This year 15 students have studied Radio 2. Seven have gained Intermediate Certificates

Keith, VK6PT the Club Organiser, has written a Radio 3 Course which prepares students for the A.O.C.P. examinations.

Three students sat for the A.O.C.P. in August. Two passed Regs and got Theory marks in the 50's. Both are keen and will be sitting again in February. We wish them luck.

A disappointing feature of the clubs activities has been the lack of skeds on VHF- only three Portm stations were contacted.on 6 metres in three years although we were getting through 5 - 6 and 5 - 8 on 52.586.

Now that the school is eligible for a full callsign (VK6AG ??) and HF equipment we hope to be more successful.

If any operators (retired) can come up on 80 Metres on Mondays 4 - 5 pm or any lunchtime 1.00- 1.25 pm we would be only too pleased to "sked" as the lads are very keen.

73 Keitai VK6PT

**NORTH MODERN SCHOOL RADIO CLUB**

The P.M.S. Radio Club was a little late starting off during 1974 due to the lack of an Operator. We believe that some of the lads put some pressure on Les VK5AN who came to their assistance and in September VK6PS was back on the air. Quite a deal of experimenting with antennas was done by the members as suitable areas are a bit of a problem. Finally came up with an Inverted V for 80 and 20 metres in time for J.O.T.A. and from reports these must have worked quite well.

Details for 1975 are as yet unavailable but do believe some of the lads will represent their station at the Albany Hamfest.

If you didn't have any success with the last couple of "puzzles"

SEE THIS ONE.

From the QSL Manager's Report :-

'There has been a small increase in turnover with a greater proportion destined for Japan and U.S.A. This has led to a better economic handling until October last when the rise in postage was over 60%. Approval was thus requested for a rise in sticker prices to 80 cents per 100 and dated from the December General Meeting.

A close measurement of postage costs compared with cards despatched since October has been kept and in packs of 100 gm and over there is some slight gain to offset a number of obscure addressees. The position will be reviewed each quarter of this year and any abnormal situation will be advised.

The assets of the Bureau are \$79.13 to commence the new year which is considered quite adequate.'

THE WIRELESS INSTITUTE OF AUSTRALIA  
W.A. DIVISION

QSL BUREAU AS AT 31ST DECEMBER, 1974.

| <u>RECEIPTS</u> |                          | <u>PAYMENTS</u> |                               |
|-----------------|--------------------------|-----------------|-------------------------------|
| 1.              | to 1.74 Sale of Stickers | \$106.00        | 1. to 1.74 Purchase of Stamps |
| 31.12.74        |                          |                 | Box F315 Rental 21.00         |
|                 |                          | \$106.00        | Receipt Book 00.58            |
|                 |                          | =====           | \$106.00                      |
|                 |                          |                 | =====                         |

TRADING ACCOUNT

|    |      |                   |          |          |                   |          |
|----|------|-------------------|----------|----------|-------------------|----------|
| 1. | 1.74 | Stock of Stickers | \$65.92  | 31.12.74 | Sale of Stickers  | \$106.00 |
|    |      | Stock of Stamps   | \$33.03  |          | Stock of Stickers | \$ 53.08 |
|    |      | Purchase of       |          |          | Stamps on hand    | \$ 26.05 |
|    |      | Stamps            | \$84.42  |          |                   |          |
|    |      | Trading Profit    | \$ 1.76  |          |                   |          |
|    |      |                   | =====    |          |                   |          |
|    |      |                   | \$185.13 |          |                   | \$185.13 |
|    |      |                   | =====    |          |                   | =====    |

ASSETS

|    |      |                 |          |
|----|------|-----------------|----------|
| 1. | 1.75 | Stock on hand   |          |
|    |      | Postage Stamps  | \$ 26.05 |
|    |      | Stickers atcost | \$ 53.08 |
|    |      |                 | =====    |
|    |      |                 | \$ 79.13 |
|    |      |                 | =====    |

VK6RU

J.E.RUMBLE QSL Manager.

\* \* \* \* \*

Answer to last months Brain Teaser

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 3 | 8 | 7 | 2 | 0 | - | 1 |
| 5 | - | 3 | 2 | - | 4 | 4 |
| 5 | - | 9 | - | 3 | 5 | 2 |
| - | 1 | 6 | 1 | 0 | - | - |
| 7 | 2 | - | 1 | 9 | 1 | 3 |
| 0 | - | - | - | 7 | 9 | 2 |
| 2 | 7 | - | 1 | 6 | - | 5 |

### A BEAM FOR TWO METRES.

Contributed by Will VK6UU.

This six element wood boom Yagi is the best performer on 2 metres I have come across. Several have been built, including 2 stacked 6 by 6.

The single 6 element has a gain of 10 db with a 3 db beam angle of about  $\pm 30$  degrees.

Elements are cut from 1/8 in. brass rod, and the boom from a suitable length of 3/4 in. wood.

Construction : Drill holes of such a size that the elements require tapping into position - this should hold them in place.

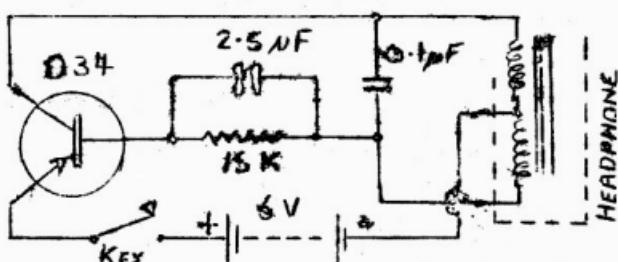
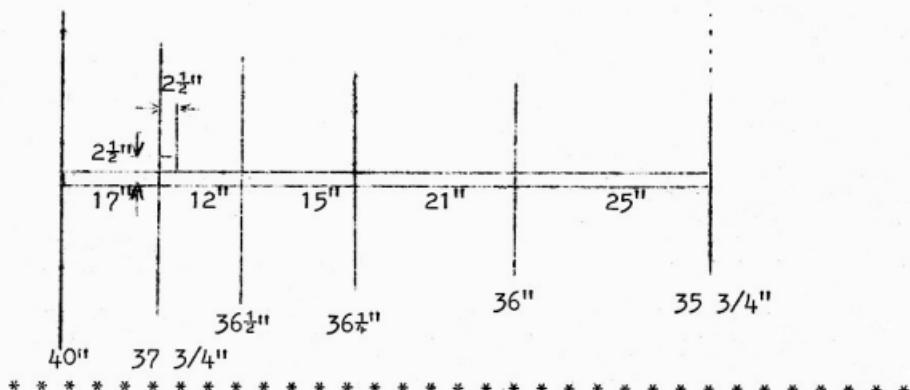
Gamma rod is mounted in the same manner and in the same plane as the elements. The Gamma capacitor is a 30 pf beehive type. Method of water proofing - this is up to you.

When attaching coax braid to centre of driven element, divide braid into two parts and attach one half onto one side of driven element and the other onto the other side. This is necessary because the wooden boom makes attachment to the exact centre rather difficult. If you want to be sure that the elements wont fall out, a drop of solder on either side of the wood boom will do the trick.

Gamma dimensions are for 50 ohm cable.

Frequency 145.5 to 147.5. MHz.

71 6"



CODE  
PRACTICE  
OSCILLATOR

Knock the Zed Off  
your callsign-huh ?

Below are some of the highlights from the report from the Scout Association of Australia 17th Jamboree -on-the-Air.

' About 20% more Scouts, but about 20% less Guides and the lowest number of visitors for five years took part. The weather was terrible - a very stormy week-end which threatened the portable antennae systems, but showed the value of proper pioneering methods - so that probably accounted for the drop in numbers.'

'Christmas Island reported in for the first time and showed what a dream DX they had- Malaysia, UK, Finland, Malawi, Italy, Germany, Bahrain, India, Sweden, Denmark, and South Africa.'

' For the first time RTTY was used between Scout Groups in W.A. and demonstrated operating DX, but not to a Scout station.'

'From the log Sheets it seems only one station in W.A. (VK6AN) was able to contact VK1BP for the official opening. Our attempts to tape the exercise for rebroadcast at a time convenient to W.A. were unsuccessful. It is still not sure whether 1500 or 2000 hours is more convenient.'

' A copy of a report apparently printed as a press release accompanied one of the Guide returns, and it shows the true spirit of W.I.A./ J.O.T.A. co-operation:-

J.O.T.A. meant a very interesting and enjoyable Saturday afternoon for the 1st. South Perth Guides and their Leader, who were accompanied by the Division Commissioner of Lee Steere South, Mrs Gelley. There were friendly conversations with other W.A. Guide and Scout Groups and with the 1st. Silkstone Scout Group of Ipswich, Queensland. The callsign was VK6LG and the operator frequently gave his identification by saying '6LG - Six Lovely Girls' much to the blushes and amusement of the Guides who, appropriately, numbered six. Between calls, the operator, Mr. L.G. Wilson, told of his contacts and experiences over many years of ham operating from the time he was introduced to radio in the 1920's. He played a tape recording, which included traditional Japanese music, sent by a fellow "ham", a Japanese doctor.

After having stayed far longer than intended, thanks were extended to our host, who seemed reluctant to say goodbye, and homeward bound the girls all agreed that it had been a satisfying afternoon in more ways than one- the pleasure gained from contact with other groups, and being in the company of a fine old gentleman who apparently really enjoyed himself in his first participation in J.O.T.A. with Guides.'

Once again many thanks to all those who made the weekend activity possible - Amateurs and their wives, National Organisation, Branch Staff, Liaison personnel, Leaders, Scouts and Guides.

Report from:- Peter Hughes VK6HU

Branch Commissioner for J.O.T.A.

\* \* \* \* \*

This is a magic space

to make it grow B I G G E R and B I G G E R before your eyes

DONT CONTRIBUTE ANYTHING TOWARDS THE BULLETIN.

From an SWL friend of mine, Bill Marchant, en route from Melbourne to Broome, comes this first hand account of how business as usual (almost) is the order of the day in Darwin in the aftermath of cyclone Tracey. I dont think Bill or the boys in Darwin will mind me putting this to print.

Dear Ross,

I'm still " on the road" but I have made my stop-over in Darwin a lengthy one by giving a hand on some of the repair work, mainly re-roofing.

Last night I had the priveledge of attending the 100 th. meeting of the Darwin Amateur Radio Club. This was held in the ground floor flat of Henry VK8HA, the secretary, and since the flat was a ground floor one it was in reasonable condition, the noise of a portable generator outside being the only indication that something strange was afoot. However, if you looked out the window at the wreckage of the Club H.Q. you'd realise these were extraordinary times.

The minutes of the 99th genoral meeting were read out :

"Meeting held at residence of VK8HA on 6.1.75

Meeting opened at 1930 hours.

Present: VK8HA, hon. sec.

Due mainly to the aftermath of Cyclone Tracey devestation, no other members available for the meeting.

(Signed ) VK8HA Hon. Sec."

Needless to say these minutes were passed and seconded amid great laughter, and general business consisted of finding out the condition of beacons, towers and masts etc. This didnt take long, as they were all wrecked. Most personal equipment was intact - but water damaged and members agreed their big loss was that of technical notes and publications. Just when the Club becomes operative again is very doubtful since some members are either transferred or leaving Darwin, and those remaining have a prime concern of getting homes rebuilt so that wives and children can return. And if you see the colossal damage it is hard to imagine when that will be. By the way, some of those present were Doug VK8KK, Barry 8ZCF, Henry 8HA, Trevor 8ZTW, Dave 8ZRB, Colin 8CM, and in the visitors book I noticed the signature of Basil 6NA.

There were quite a number of QSL cards received which unfortunately cannot be acknowledged. One I notice was from R.A. Gray VK6RQ.

P.S. Rainstorm sent a few things afloat in my room, including this letter but apart from another envelope, I dont have to re-write.

\* \* \* \* \*

I wonder if we could do a practical service for this club by collecting spare copies of "A.R.", QST, etc and ARRL Handbooks or other technical publications to help re-establish this club?

\*\*\*\*\*

Just a brief reminder to anyone willing to do a little bit more work as a member of council - bung in a nomination form - thats the first step , then just sit back and wait for the election -if there is one!

\* \* \* \* \*

WANTED URGENTLY

PROGRAM ORGANISER

URGENTLY WANTED

Must be willing to spend hours on the phone twisting arms by remote control. Must be flexible -able to change lectures instantly.

## HAMADS

FOR SALE : Mosley Tri-Band Beam  
Please contact VK6NC Phone: 571550

FOR SALE : Pye Ranger VHF Hi Band AM 12V Transcievers  
Ideal for modification and satellite work \$20.00

Pye hybrid Low Band AM \$ offer

Weston Low Band AM \$25.00

Pye 50MHz Band AM Base \$40.00

Communications Reciever Lafayette HA-600  
12V and 24OVAC Solid State \$135.00

Numerous Hi Band Pye Overland 10W  
50' Crank Up Tower with new guys  
Quantity of Aluminium Tubing Offer

Shack Sell Out  
VK6NW Dave Bridge 574060 (B667487)  
264 High Road, Riverton 6155

FOR SALE: KP202 (Chan B, 1, 4) plus 10 NICADS  
plus Charger \$140.00

VK6EU QTHR Phone: 684092

WANTED : Rotator Ham II, CD44 or similar.  
VK6HK QTHR Phone: 462864

FOR SALE : Globe D S B 100 Transmitter - ex VK6EJ  
DSBSC 80 mx - 10 mx with H/D Transformer and wire  
ready to go on air. \$50.00 o.n.o.  
Contact VK6CW for demo

## REPEATER GROUP NOTES

The new Solid State Repeater, which the group has decided to build, is already functional and may be in use when you read these notes.

The Repeater Fund is running short and there are a lot of users of the Repeater who have not, as yet, helped financially.

PLEASE - THE REPEATER NEEDS YOUR FINANCIAL ASSISTANCE.

Cheques etc. are payable to:

J.C. Farnell  
C/- P.O. Box 87  
SCARBOROUGH  
W.A. 6019

EARBASHERS please note - Lecturers are required for our general meetings. Please feel free to choose your own topic!

HURRY - before someone beats you to this wonderful opportunity.

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